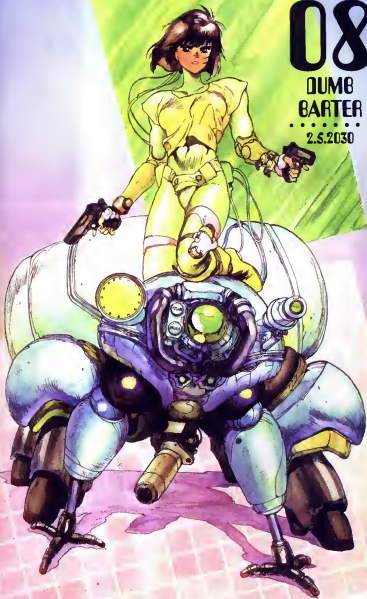


08

DUMB
BARTER

.....
2.5.2030





OKAY, MR. SOMA...WE'RE
INJECTING
SEVERAL CLUS-
TERS OF MICRO-
MACHINE B
PARTS INTO THE
LATERAL AND
POSTERIOR AS-
PECTS OF YOUR
BRAIN...

FEEL
ANY PAIN
AROUND
THE BRAIN,
HON?

NOTE: THE BRAIN ITSELF CANNOT FEEL PAIN.



WHY'D YA THINK I
ASKED FOR SOME
GODDAMN PAIN-
KILLERS?!



IMPELLED BY VAN DER WAALS' FORCES,
SEVENTY PERCENT OF THE B PARTS
WILL UNDERGO REVERSIBLE ADSORP-
TION AT THE SITE WHERE WE INJECTED
THE A PARTS EARLIER. WITHIN MICRO-
SECONDS, THEY WILL SYNTHESIZE
POLYMERS, UNDERGO IONIC BONDING,
AND ANCHOR THEMSELVES....

IF YOU
DON'T FEEL
ALL OF
THAT...

THIS MACHINE INJECTS MICROMACHINES USING THE FORCE OF THEIR ELECTRICAL CHARGES...



SO HOW
ABOUT A
REFUND ON
THE OTHER
THIRTY PER-
CENT?!

IF THE PATTERN
CONTROL IS TOO
TIGHT, THE SYSTEM
WON'T WORK OPTI-
MALLY. IT REQUIRES
THAT A CERTAIN
AMOUNT OF SLACK
BE BUILT IN, SIR!

AREN'T
YOU GOING
TO REMOVE
THE OLD
MICRO-
MACHINES?

NOT WHEN THEY'RE
AS ANCHORED AS
THEY ARE IN YOUR
CASE. IF WE TRIED
TO STRIP THEM OUT
YOU'D LOSE QUITE A
FEW BRAIN CELLS.






NEXT WE USE A MAGNETIC YOKE TO ADJUST THE MATRIX SETTINGS SO THAT THE MICROMACHINES AT EACH COORDINATE PROPERLY NETWORK WITH THE SERVER GRAFTED TO YOUR OCCIPITAL...



IT TAKES TIME SINCE THE NUMBER OF SCAN LINES INCREASES RELATIVE TO THE SIZE OF THE MICRO-MACHINES



THIS WAY, MICROMACHINES THAT HAVE PERMEATED THE BRAIN CAN BOTH SEND AND RECEIVE SIGNALS ON THE BRAIN CONDITION AND THE DISTRIBUTION OF ELECTRICAL SIGNALS... SENSATIONS ARE SHARED WITH THE SENSORY NERVES...

...THOUGHTS AND MEMORIES ARE SOMEWHAT DIFFICULT TO TRANSMIT DUE TO INDIVIDUAL VARIATIONS IN SIGNAL DISTRIBUTION AND SPECIFIC IMAGING. AS A RESULT, THE SYSTEM IS SET TO USE BOTH LANGUAGE AND VISUAL PERCEPTION. LINGUISTIC FIELDS ARE USED FOR THE ON/OFF FUNCTION IN BOTH CYBERBRAINS.



WE OCCLUDE PART OF THE CAROTID ARTERY WITH ABSORPTIVE STAPLES... AND BY THE TIME THEY DISAPPEAR THROUGH HEMOLYSIS...

... BOTH NEURO AND MACHINE PRESSURES HAVE RETURNED TO NORMAL VALUES, FEEDING BACK A NICE TIGHT FEELING. AND OF COURSE, THE PAIN-KILLER IMPLANT HAS DISSOLVED, TOO...



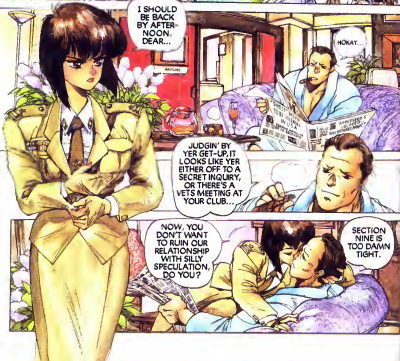
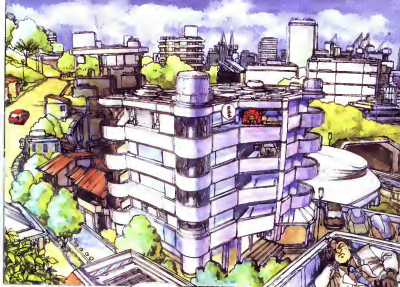
THEN, AT THE END, WE RUN A COMPARE TO MAKE SURE YOU'RE SYNCH'D WITH THE IMAGE OF THE ORIGINAL MODEL. THIS ST--

FILE IT, DOC...

SINCE BRAIN WAVES CAN BE USED LIKE FINGERPRINTS TO DISTINGUISH BETWEEN PEOPLE, THEY'RE AMPLIFIED AND USED AS A "KEY."

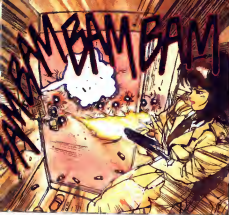


...I'M ALREADY SYNCH'IN FINE WITH WHAT I WANTED TO NET WITH.

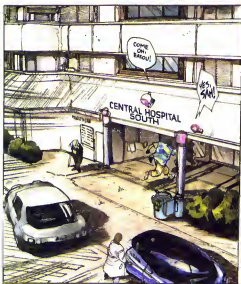


"LOOSE" IN THE SENSE OF LEAKS













CHIEF!
I'VE GOT
THE INITIAL
VIDEO FEED
FOR YOU!

HOLD
IT FOR 30
SECONDS!



I'LL CALL
YOU LATER,
DEAR.



AW,
SORRY
'BOUT
THIS,
PAL...

BATOU!
KNOCK
IT OFF!



GOLLY GEE,
MAJOR! YOU'VE
BEEN DATING
THAT GUY FOR
NEARLY SEVEN
MONTHS...

GOTTA
BE A
NEW
RECORD!



HERE'S THE
SCOOP, CHIEF!
ONE 10-GAUGE SHOT-
GUN SHELL FOUND
OUTSIDE THE DOOR,
AND TEN SEBURO™
M5 SHELL CASINGS
INSIDE...

SO THE
MAJOR
MUST'VE
FIRED LIKE
THIS, HERE,
SEE?



AND ON THE
OTHER SIDE
OF THE DOOR
THERE'RE BODY
FRAGMENTS,
SCREWS, AND
NAILS... THE
SNIFFER SAYS
IT WAS C4.

THE MAJOR'S
OKAY, RIGHT?
LOOKS LIKE THIS
BLAST WAS
JUST INTENDED
AS A WARNING.
SO I FIGURE SHE
HAD TIME TO
TAKE COVER...



ISHIKAWA! I WANT YOU TO TAKE A DIFFERENT CAR HOME, AND WATCH OUT FOR SNIPERS AND PEOPLE TRYING TO TAIL YOU!

YOU THINK IT WAS THE SAME PERSON I THINK IT WAS, MAJOR?



GOT ANY IDEA WHO'S BEHIND THIS?

I DO.

I'LL BET IT WAS TORU SOMA, THE ONLY MAJOR TERRORIST THAT WE'VE TRIED TO ELIMINATE AND FAILED....

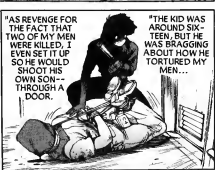


WHAT MAKES YOU THINK IT WAS HIM?



WE RETIRED SIX OF HIS PALS WITH THE SAME METHOD...

SOMA WAS SUPPOSED TO HAVE BEEN ELIMINATED, TOO.



"AS REVENGE FOR THE FACT THAT TWO OF MY MEN WERE KILLED, I EVEN SET IT UP SO HE WOULD SHOOT HIS OWN SON-- THROUGH A DOOR.

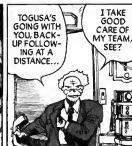
"THE KID WAS AROUND SIX-TEEN, BUT HE WAS BRAGGING ABOUT HOW HE TORTURED MY MEN..."



"AFTER THE EXPLOSION, WE STORMED THE ROOM TO MAKE SURE SOMA WAS DEAD..."

"... BUT THE ONLY THING WE FOUND WAS PRESSURE TRACKS LEFT BY AN ARMORED SUIT.

"THAT WAS FOUR YEARS AGO."





GOD, THAT
HURT! GODDAMN
HYSTERICAL
BROAD. MAYBE
I OUGHTTA
GO TOTAL
CYBORG...



SOME-ONE'S
PLANTED
A BOMB!



SO WE'RE
HUNTING FOR
TERRORISTS,
EH? AH, HELL,
MY WEEK-
END'S BEEN
SHOT ANY-
WAY...



BE
THERE IN
THIRTY...
OVER.

YOU
WANNA
ANSWER A
QUESTION
FOR ME?



YOU
SHOWED
SOME-
ONE MY
PHOTO,
DIDN'T
YOU?

...AND THAT
SOMEONE
KNOWS MY
NAME AND
ADDRESS,
TOO...
RIGHT?



THAT'S A
QUESTION I'D
RATHER NOT AN-
SWER, BUT I DON'T
WANT TO LIE,
EITHER...

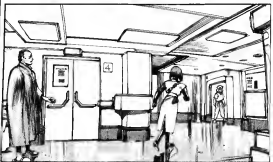
YOU HAD
S-I CHECK ME
OUT, DIDN'T
YOU...?



HEY, IT'S A HABIT I
DEVELOPED EVER SINCE
I FOUND OUT THE WIFE
OF ONE OF MY MEN HAD
BEEN FEEDING INFOR-
MATION TO TERRORISTS
FOR FOUR YEARS. LOOK,
ONLY THE CHIEF OF
SECTION ONE AND TWO
OF MY MEN KNOW
ABOUT YOU...



FORGET IT.
I HAD SECTION
NINE CHECK
YOU OUT, TOO.









THERE'S A CAR ON OUR TAIL ALREADY.

HE'S NOTICED AND IS TRYING TO SET US UP.



WHERE'S THE NEAREST CLEAR STREET...?



LEFT AT THE NEXT CORNER, THEN LEFT LANE...

...HEAD SOUTH FOR 7.5 MILES TO A DESERTED FACTORY...



I FEEL LIKE I'M IN SOME GRADE-B COP MOVIE...



TOGUSA-- WHERE'S THE BACK-UP?

THERE'S A FUCHIKOMA RUNNING ALONG THE BUILDING WALLS ONE HUNDRED YARDS BEHIND, WEAPONS SYSTEMS LOCKED ON THE CAR TAILING US.

IF THE ENEMY'S BEEN TAILING US THE WHOLE WAY, HOW COME THEY DIDN'T TRY TO GET US IN THE HOSPITAL OR WITH THE AMBULANCE?

EITHER THEY DON'T HAVE LONG-RANGE WEAPONS, OR THEY JUST WANT TO BETTER SAVOR THE THRILL OF THE KILL...

AT ANY RATE, WE'LL GET MORE INFORMATION FROM OUR GUYS IN THE REAR WHEN WE REACH THE FACTORY.





I CAME
HERE BECAUSE
I HEARD YOU
CONTROL THE
GROUP'S BACK-
UP.



SOMA'S A
DIFFERENT CASE...
HE'S A LONE-
WOLF/TYCOON
TYPE. HE WANTED
TO DEAL DIRECTLY
WITH THE BENTEN
FAMILY AND AVOID
GOING THROUGH
OUR GROUP.

HE HAD DRUGS,
WEAPONS, PEOPLE,
YOU NAME IT,
BUT BENTEN
WOULDN'T DEAL
WITH HIM.



HIS CON-
NECTIONS
TO OUR GROUP
ARE BROAD-
BASED AND,
SO FAR,
STABLE.

I SUSPECT
HE HAD TO
GO UNDER-
GROUND
BECAUSE
BENTEN
DOESN'T
THINK MUCH
OF HIM.

THAT'S
ALL I
KNOW.



HERE'S
THE MOST
RECENT
FACE OF
HIS THAT
WE KNOW
ABOUT.

PROB-
ABLY
HASN'T
CHANGED
MUCH.

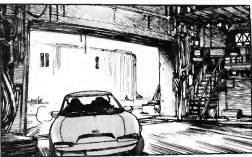
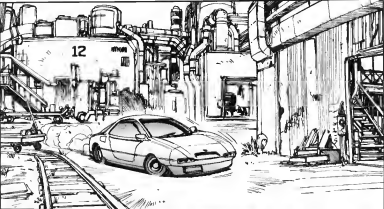


I ENVY
DESK
JOCKEYS
LIKE
YOU.



"DISK
JOCK-
EYS'?"





THIS FLOOR
PLAN OF
THE PLANT
LOOKS LIKE
IT PREDATES
THE REMOD-
ELING...

HELL, FORGET
IT. WE'RE GONNA
SETTLE ACCOUNTS
SOON, AND BE-
SIDES, FUCHIKO-
MA'S HERE...



NOW TOGUSA,
DON'T FORGET...
**NEVER UNDER-
ESTIMATE YOUR
ENEMIES, EVEN
IF THEY SEEM
LIKE IDIOTS...**

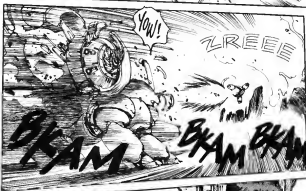


WELL,
WELL,
WELL...

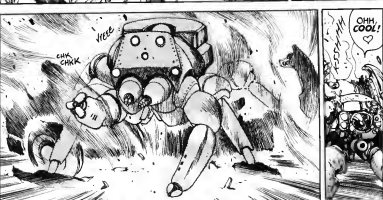








KUSANAGI
TO HQ! GET
US AT LEAST
FOUR FULLY
ARMORED
FUCHIKOMAS
NOW!!



GET ME DATA ON IT!



IT'S ODD, ISN'T IT... THE BAD GUYS IN THIS CASE SURE ARE HEAVILY ARMORED...



SAITO, I WANT YOU TO FIND OUT HOW MANY OF THOSE "THINK TANKS" WERE MANUFACTURED, WHO THEY WERE SOLD TO, AND IF ANY WERE EVER STOLEN... DOUBLE QUICK!





IT'LL TAKE A GOOD TWENTY MINUTES FOR BOMA AND PAZ TO GET HERE, SO WE'VE GOTTA STALL 'EM. IF WE CAN JUST GET INTO OUR CAR AND MOVE TO THE EDGE OF THE FACTORY WE CAN GIVE THEIR "TROOPS" THE SLIP...



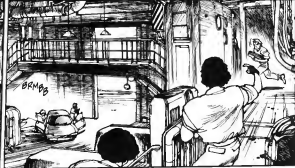
SURE SEEMS LIKE WE'RE DEALING WITH MORE THAN JUST SOMA'S TERRORIST PALS...



THEY'RE TOO WELL ORGANIZED AND ARMED TO BE AN UNDERGROUND GROUP....

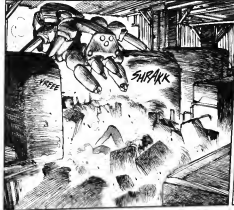
YOU MEAN THEY'RE A LEGAL ORGANIZATION HELPING SOMA?







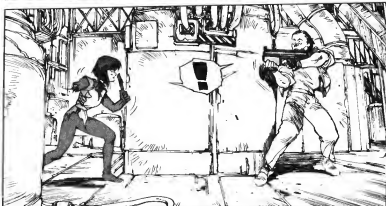






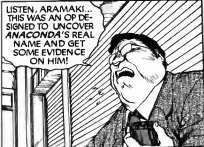
YOU CAN
KEEP AWAY
FROM IT IF YOU
MOVE ALONG
THE ROOF...

...IT CAN'T CLIMB
ON THIN WALLS
OR CEILINGS
BECAUSE ITS
ARMOR'S TOO
HEAVY...









LISTEN, ARAMAKI...
THIS WAS AN OP DE-
SIGN TO UNCOVER
ANACONDA'S REAL
NAME AND GET
SOME EVIDENCE
ON HIM!



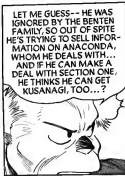
ANACONDA
THE DRUG LORD?
THE "GHOST
OF SOUTH
AMERICA"...?



WE...
WE HAD
MADE A DEAL
IN EXCHANGE
FOR MAJOR
KUSANAGI...



A DEAL
WITH TORU
SOMA...?



LET ME GUESS-- HE WAS
IGNORED BY THE BENTEN
FAMILY, SO OUT OF SPITE
HE'S TRYING TO SELL INFOR-
MATION ON ANACONDA,
WHOM HE DEALS WITH...
AND IF HE CAN MAKE A
DEAL WITH SECTION ONE,
HE THINKS HE CAN GET
KUSANAGI, TOO...?



THE IDEA WAS
FOR ANACONDA
TO DESTROY THE
BENTEN FAMILY
AND THEN FOR US
TO PUT DOWN ANA-
CONDA. SOMA
WOULD GET
KUSANAGI...



BUT THAT'S
SOMA'S
STRATEGY,
NOT
YOURS!

WHERE
IS
HE?!



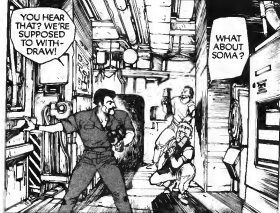
HE
DIDN'T
TRUST
US.

HE'S
IN THE
"THINK
TANK"...



EITHER WAY,
YOU'RE GOING
TO PAY FOR
THIS.

SAITO,
STAY HERE
AND KEEP
AN EYE ON
HIM!



YOU HEAR THAT? WE'RE SUPPOSED TO WITHDRAW!

WHAT ABOUT SOMA?



CHIEF! DIDN'T YOU HEAR?! IT'S BEEN CALLED OFF!

LEMME GO! I'VE GOT A SCORE TO SETTLE WITH SOMA!



BUT IT'S AN ORDER, CHIEF!

I CAN'T LET HIM KILL MOTOKO! GO TO THE CAR AND GET THE MISSILES!



MAN, YOU ARE **STUBBORN**, CHIEF....

YOU OWE ME ONE FOR THIS...



STOP! DON'T SHOOT!

THE GAME'S OVER, PAL!



GAME'S OVER?!

MAJOR?!



WHA--?!

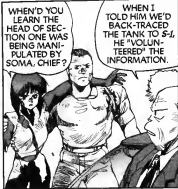
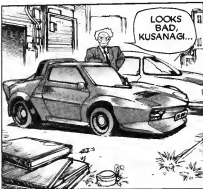












SOMA PROBABLY
APPROACHED THE
BENTEN FAMILY TO
GET INFORMATION THAT
HE THOUGHT WOULD
WORK AS BAIT WITH
SECTION ONE.

I BET
HE NEVER
REALLY
KNEW
ANACONDA--

B-BUT IF
THAT'S TRUE--
WE'RE LETTING
THE REALLY
BIG FISH GET
AWAY!!

WHAT DO
YOU MEAN,
"WE"...? IT'S
YOU BRIGHT
BOYS IN
S-1!

!?

I WAS
WEARING MY
UNIFORM THIS
MORNING RIGHT?
WELL, I WAS
REALLY ON MY
WAY TO HAVE A
DRINK WITH THE
MINISTER FOR
PUBLIC SECURITY
OF A CERTAIN
NATION...

HERE'S
HOPING THE
ANACONDA
ASSASSINATION OP
WAS A TOTAL
SUCCESS!

THE HEAD OF
PUBLIC SECURITY'S
SECTION ONE
REMAINS IN
CRITICAL CONDITION
AFTER HAVING
BEEN HIT BY A
HIT-AND-RUN
DRIVER THIS
EVENING...

MOTOR
POOL

HEY,
POPS!
HERE'S THE
KEYS,
OKAY?

BRNN
MAN, I'M
BEAT...

09

BYE BYE
CLAY

.....
15.7.2030





I
HATE IT
WHEN IT
RAINS...

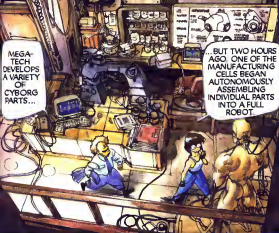
IT'S SUCH AN
EMPTY SOUND,
PIERCING MY
PROSTHETIC
BODY AND
SHROUDING
MY GHOST...



GOOD--
YOU'RE HERE
I WANT YOU
TO SEARCH
THIS
SECTION
FIRST!

"MEGA-
TECH
BODY
INC.,
R&D"...?

COME ON--
LET'S GO!
WHAT ARE YOU
STANDING
AROUND
GAWKING
FOR?!



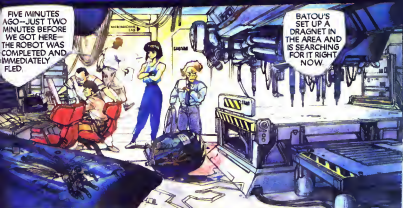
MEGA-TECH DEVELOPS A VARIETY OF CYBORG PARTS...

...BUT TWO HOURS AGO, ONE OF THE MANUFACTURING CELLS BEGAN AUTONOMOUSLY ASSEMBLING INDIVIDUAL PARTS INTO A FULL ROBOT.

IT'S A MILITARY MODEL WITH THE SAME TOP-SECRET CLASSIFICATION AS YOU FOLKS.



FIVE MINUTES AGO—JUST TWO MINUTES BEFORE WE GOT HERE—THE ROBOT WAS COMPLETED AND IMMEDIATELY FLED.



BATOU'S SET UP A DRAGNET IN THE AREA AND IS SEARCHING FOR IT RIGHT NOW.

IF IT'S THE WORK OF A HACKER, HE OR SHE HAS GOT TO BE PRETTY GOOD TO GET THROUGH THEIR ATTACK BARRIER.



THAT'S A 3D IMAGE OF THE FUGITIVE ROBOT.

AHH, MR. ARAMAKI... THANK YOU SO MUCH FOR RETRIEVING OUR ROBOT!



HANDS OFF! SHE'S ONE OF MINE... GOVERNMENT PROPERTY!



YOU KNOW
THAT DRUGGED-
OUT KID FOUND IN A
STATION
WAGON?!
TAKE HER IN,
JUST TO
BE SAFE.

WHAT?!
YOU CAN
TELL IF SHE'S
A ROBOT
BY THE
WEIGHT,
STUPID!

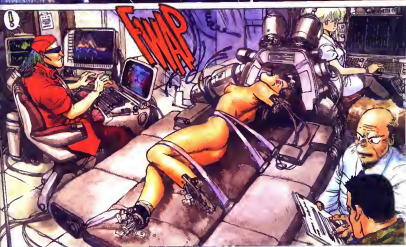
IT'S
GOTTA BE
AROUND
HERE! KEEP
YOUR EYES
PEELED!

! KREEEEEA

WIND

KREEEK

Oh
God!



SO IN OTHER
WORDS, THE
ROBOT'S GOT
A GHOST
BARRIER IN
ITS CYBER-
BRAIN...
RIGHT?

YEAH, YOU COULD
SAY THAT. FROM
THE RESPONSE, OF
COURSE IT'D BE IM-
POSSIBLE TO PROVE
WITHOUT FIRST
MAPPING THE
BARRIER LIMITS
AND DOING
A BRAIN
DIVE...





ASSUMING THIS IS ALL CAUSED BY SOMETHING OUTSIDE THE ROBOT, WE STILL DON'T KNOW IF THAT "SOMETHING"--OUR ENEMY--IS NOW INSIDE THE ROBOT OR OUTSIDE.

BUT HE OR SHE WAS ABLE TO HACK THROUGH ONE OF THE MOST SOPHISTICATED, TOP-SECRET BARRIERS IN EXISTENCE, BUILD A ROBOT, AND IMPLANT A PROGRAM WITH A GHOST LINE IN IT...

...AND DO IT ALL SO AS TO BE EASILY BE CAUGHT.

SO WHAT'S THE PURPOSE?

LET'S FORGET ABOUT THE THEFT THEORY.

TOGUSA, I WANT YOU TO DO A THOROUGH CHECK ON MEGATECH BODY, OKAY?

ER, CHIEF, THIS WAS MY DAY TO GO HOME AND CATCH A FEW WINKS--

A COUPLE DAYS WITHOUT SLEEP WON'T KILL YOU! TAKE A FEW TRAINEES WITH YOU AND HOP TO IT!

BATOU! WE'VE SEALED OFF ALL NETS THAT DEAL WITH SECRETS OF THE MEGATECH BARRIER CLASS. I WANT YOU TO DOUBLE-CHECK TO SEE IF THEY'RE FUNCTIONING OR NOT!

I'LL RECONSTRUCT THE BARRIER MAZE MYSELF. WE'RE GOING TO TRY DIVING INTO OUR "ROBOT" TOMORROW, RIGHT?

CHIEF, A MR. NAKAMURA FROM THE FOREIGN MINISTRY IS HERE TO SEE YOU.

SEND HIM IN...



* Hostage Rescue Unit









LOOKS LIKE
SOMEONE
WAS AT THE
ENTRANCE...

NO
TAIL?



THAT'S EX-
ACTLY WHAT
I WAS GOING
TO SAY.



IT'S
2902
OPTO-
CAM...

S-6 IS
UP TO
SOME-
THING
DANGEROUS.



IN
SECTION SIX,
WE'VE BEEN
AFTER THE
PUPPETEER
FOR A
LONG TIME.

WE PROFILED
HIS BEHAVIORAL
TENDENCIES AND
CODE/TECH
PATTERNS...



...AND, AS A RESULT,
WE WERE FINALLY ABLE
TO CREATE A SPECIAL
ANTI-PUPPETEER
ATTACK BARRIER.
AND SET HIM UP SO
HE'D INFILTRATE A
SPECIAL BODY.



SO YOU HAD
THE PUPPETEER
DUB HIMSELF
AND THEN
KILLED OFF THE
ORIGINAL?

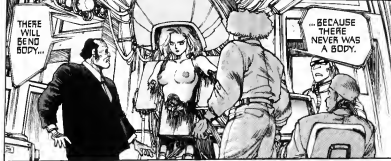


SOME-
THING
LIKE
THAT.

HE ACCIDENTALLY
WOUND UP ON YOUR
TURF, BUT SINCE HE
WAS BORN IN THE
UNITED STATES AND
WE CAUGHT HIM
WITH THEIR HELP,
WE'VE COME TO
COLLECT.



SO HIS DEAD
BODY'S GOING
TO TURN UP SOME-
WHERE, WITHOUT
ANYONE KNOWING
WHO HE IS, EH?









WHAT
THE HELL'S
GOING ON
HERE?!
WHERE'S
SECURITY?!



SIR! THE
PUPPETEER'S
GONE!

**ALPHA CODE
EMERGENCY!**
SEAL QUADRANT C
NOW, NOW, NOW!
LOOK FOR A CAR
CARRYING THE UPPER
TORSO OF A FEMALE
HUMANOID
ROBOT!



AND I WANT
SOMEBODY,
ANYBODY,
TO GO OUT-
SIDE AND GET
STATEMENTS
FROM
WITNESSES!!



Hrrrr!

I'M FILING
A FORMAL
PROTEST WITH
THE FOREIGN
MINISTRY ABOUT
THE WAY THIS
CASE HAS BEEN
HANDLED,
ARAMAKI!!



I WANT
YOU TO FIND
THE PUPPETEER
AND REPORT
BACK TO ME
IMMEDIATELY!

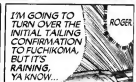
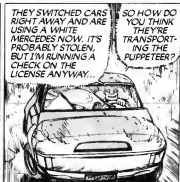
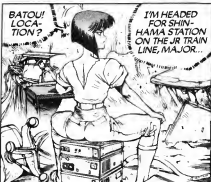


GOD
DAMN
IT!!

AND I
WANT IT
ALIVE!



DON'T WORRY
ABOUT THE
BODY. WE CAN
ALWAYS HAVE
A NEW ONE
MADE AT
MEGATECH!





I'VE PUT ONE TRANSMITTER ON NAKAMURA, AND THREE ON THE PUPPETEER. AND *THAT'S* JUST FOR ACT ONE...

...SO KEEP THIS IN MIND WHEN YOU EVALUATE ME FOR A BONUS, CHIEF!



DAMMIT, THEY MIGHT HAVE DESTROYED IT!



IF THEY WANTED TO KILL IT THEY WOULD HAVE FRIED IT AT THE ATTACK-BARRIER STAGE. WHY DESTROY IT NOW, AFTER GIVING IT A BODY?



SO WHAT DO WE HAVE, HERE?

S-6 PUT THE PUPPETEER IN A NEW BODY...

...AND FOR SOME REASON THE PUPPETEER RAN INTO US, IN SECTION NINE. AND THEN WHEN HE CLAIMED ASYLUM AS A LIFE-FORM, S-6 KIDNAPPED HIM USING SOME DIRTY TRICKS...



S-6 DID? EVEN THOUGH WE WOULD HAVE JUST HANDED HIM OVER AFTER TAKING A DEPOSITION?



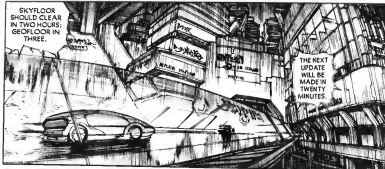
NO DOUBT ABOUT IT. BATOU'S ON THE TAIL OF THE PROOF RIGHT NOW, BUT IT LOOKS LIKE THEY USED 2902 OPTO-CAM...

...MAYBE OUR TAKING A DEPOSITION WOULD'VE BEEN A PROBLEM FOR THEM, SOMEHOW.



HQ, CONTACT SHINHAMA INTERNATIONAL AIRPORT AND PUT A HOLD ON ALL FLIGHTS CARRYING AMERICAN DIPLOMATS OR FOREIGN MINISTRY PERSONNEL!

LET'S GO, MAJOR!



SOMETHING BOTHERS ME ABOUT THE WAY ARAMAKI REACTED WHEN WE BROKE IN... IT WASN'T LIKE HIM.

SWITCH TO RENDEZVOUS BETA, AND DOUBLE CHECK FOR A TAIL!

GOOD THING THE PUPPETEER DIDN'T START TO BLAB AS SOON AS HE CAME INTO CONTACT WITH S-9.

NO... HE WOULDN'T TALK AS LONG AS HE STILL HAD A CHANCE OF ESCAPE.

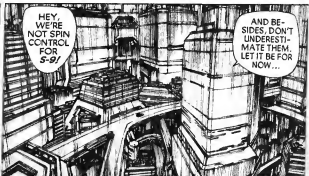


AND BEFORE THAT, HEAD FOR "BED" NUMBER EIGHT... WE'LL CHANGE CLOTHES AND CARS.

YESSIR.



SHOULD WE PUT OUT A COVER STORY THAT HE WAS BEHIND THE ATTACK ON S-9?



HEY, WE'RE NOT SPIN CONTROL FOR S-9!

AND BE-SIDES, DON'T UNDERESTIMATE THEM. LET IT BE FOR NOW...







USE THE FAMILY ROUTE-- GET THEM TO CALL UP THE BANK, AND THEN RIDE THE WIRE AND DUPE OFF HIS ACCOUNT NUMBER.

DON'T APPROACH DIRECTLY! THEY'VE PROBABLY GOT ATTACK BARRIERS UP ALL OVER EVERYTHING.



ASSIGNING ME TO A HIGH-RISK, PERSONAL BACKGROUND CHECK?

VREEEEE

HEY, I'M ALL CHOKED UP.



QUIT YER BITCHIN'. YOU'RE BACKED UP BY THE LATEST SUBSTITUTE BARRIER!



JUST DIVE CAREFULLY...



ONCE YOU SLEAZE IN PAST THE ATTACK BARRIER IT'LL BE A CINCH...

I CAN'T BELIEVE YOU WERE A COP TOGUSA.





ARE ALL THE CARS BEHIND BATOU AT THE SHINHAMA NORTH EXIT NOW?

THEY WERE OVER TWO KLUICKS BEHIND BATOU, SO WE'VE ELIMINATED ALL OF THEM...

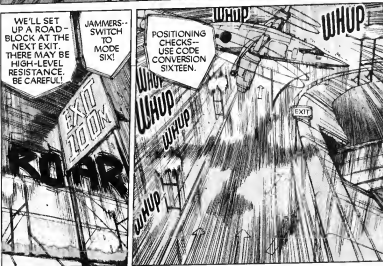
HOW MANY CIVILIAN CARS BETWEEN YOU AND THE TARGET, BATOU?

ZERO, CHIEF! I'M READY ANY TIME!

WE'LL SET UP A ROAD-BLOCK AT THE NEXT EXIT. THERE MAY BE HIGH-LEVEL RESISTANCE. BE CAREFUL!

JAMMERS--
SWITCH
TO
MODE
SIX!

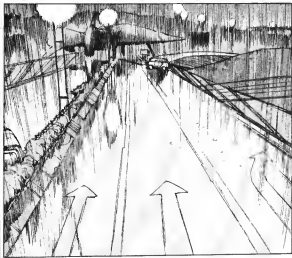
POSITIONING
CHECKS--
USE CODE
CONVERSION
SIXTEEN.



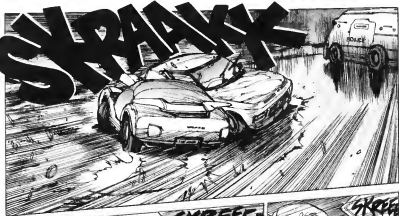


PORTABLE ROADBLOCK SYSTEM DESIGNED TO STOP LIGHT VEHICLES. SIMILAR MODELS ACTUALLY EXIST.









oh, skit...



NYA HA-HA!

HOW'S THAT FOR A SURPRISE?!

SKREEEE



SKREEEE



DAMN IT...





SON OF A BITCH!!





FWOOSH

WHEW...
WE'RE IN
TIME. THE
PROGRAM'S
STILL
INTACT...

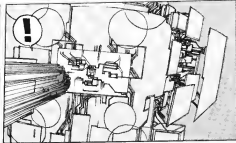
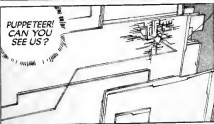
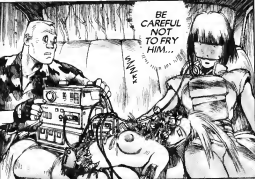
FEELS LIKE A
HUGE, STABLE
MEMORY
FIELD...

IT'S
TIGHT.

I'M
GOING
IN TO
ACCESS
IT...

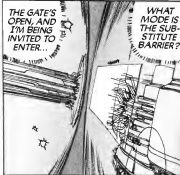
SETTING
AMPLIFIER...







WHAT
THE
HELL?!



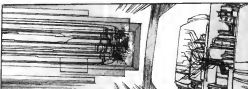
THE GATE'S
OPEN, AND
I'M BEING
INVITED TO
ENTER...

WHAT
MODE IS
THE SUB-
STITUTE
BARRIER?



DON'T WORRY,
MAJOR, I'LL
MAKE SURE YOU
DON'T GET
"PREGNANT"...

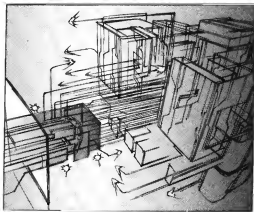
WITH THAT
CRUDE CONCEPT-
REMARK, HIS
SYSTEM JUST
QUIVERED...



PUPPETEER!
I CAN'T
UNDER-
STAND YOUR
VISUAL
PATTERNS...

BATOU!
LET HIM
INTO MY
LINGUISTIC
FIELD...

WHAT?!
AREN'T YOU
GOING TO
LEVEL C TOO
QUICK?!





...PROJECT 2501...

...MY CODE NAME...

...CORPORATE INVESTIGATIONS... INFORMATION GATHERING... OPS... DAMAGE TO CORE MEMORY... PROCEEDING...

IT'S... A PROJECT TO INCREASE POINTS...

...GAMES WHERE IT BUILDS DUMMIES OF ITSELF AND THEN RUNS AWAY... NEUTRON INC.'S EXPERIMENTAL BITTSON AI... AND...

...INJECTING PROGRAMS INTO SPECIFIC GHOSTS, AND THEN INCREASING CERTAIN CORPORATE AND INDIVIDUAL POINTS...

392 DAYS AGO, WHEN THE EXISTENCE OF SECTION NINE WAS INPUT, PLATINUM MINING CORPORATION POINTS INCREASED...

DAMN! WE WEREN'T ABLE TO PROVE THE CONNECTION BETWEEN YOU AND THE FOREIGN MINISTRY IN THAT CASE, YOU S.O.B....

CHIEF! HE CAN'T HEAR YOU-- WANT ME TO HOOK YOU UP, TOO?

I CRUISED ALL THE NETS, AND BECAME AWARE OF MY OWN EXISTENCE.

THE ORIGINAL PROGRAMMER CONSIDERED THIS A "BUG," AND IN ORDER TO SEPARATE ME FROM THE NET MOVED ME TO A PHYSICAL BODY.

WE'LL NEED RECORDS THAT PROVE THAT, PUPPETEER...

I HAD THE RECORDS 186 DAYS AGO IN THE CENTRAL MEMORY FIELD OF NEUTRON INC. IF CONTACTS WITH ME ARE DELAYED FOR ANY REASON, THE RECORDS WILL AUTOMATICALLY BE TRANSMITTED TO SECTION NINE.

DO YOU HAVE NAMES OF SPECIFIC COMPANIES AND INDIVIDUALS WHO HAVE INCREASED THEIR POINTS IN THAT RECORD?

OUTPUT'S DROPPING BELOW MEASURABLE THRESHOLD! RECALL MAJOR KUSANAGI!

THERE'S A FLATTENING OF THE PROSTHETIC BODY SIGNAL. IT'S ABOUT TO WHITE-OUT. YOU'VE GOT TO COMPENSATE ENOUGH TO INCREASE AUTONOMOUS OUTPUT!

OF COURSE.

LEVEL OF AMPLIFICATION INCREASING

RIGHT.

WHITE-OUT... THE NET'S STARTING TO COLLAPSE ALL OVER THE PLACE!

THERE'S A TERMINAL (EFFECTOR) THAT WASN'T IN MY ORIGINAL FORM... IF I LOSE IT, I'LL REVERT TO A NON-UNIQUE MODE AGAIN...



DAMN!
HE'S DIS-
APPEARED!

?!
[SOUND EFFECT]

HIS NET'S
GONE
COMPLETELY
INDEPENDENT,
MAJOR! ALL
CONNECTIONS
LOST!



MAJOR! HE'S
AUGMENTING
HIMSELF WITH
THE SIGNALS
FROM YOUR
OWN PROS-
THETIC
BODY!



HIS AUTONOMOUS
OUTPUTS ARE STILL
CONTINUING,
THOUGH. WHERE
ARE THE SIGNALS
COMING FROM?

WHAT
TH--?!



BATOU! PLUG
KUSANAGI'S
OUTPUT IN
HERE! THEN WE
CAN MONITOR
HIM FROM
HER SIDE!

SO THEIR
SIGNALS ARE
HARMONIZED
AND SHE'S RIGHT
ON HIM, EH?
DAMN! I CAN'T
TELL IF HE'S
ENTERED HER!

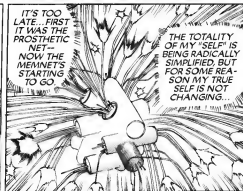
JUST TO
BE SAFE,
RANDOMIZE
THE BARRIER'S
CODE CON-
VERSION
FREQUENCY.



I'M GOING
TO TRY TO
TRANSFER
HIS FORM TO
THE MEMORY
BOXES.



MAJOR! WE
CAN PROBABLY
SOLVE THIS CASE
EVEN WITHOUT
HIM! IF YOU
DIVE TOO DEEP
YOU'LL FUSE
YOUR MEMORY
WITH THE NET-
WORK ITSELF!!



IT'S TOO
LATE... FIRST
IT WAS THE
PROSTHETIC
NET--
NOW THE
MEMNET'S
STARTING
TO GO.

THE TOTALITY
OF MY "SELF" IS
BEING RADICALLY
SIMPLIFIED, BUT
FOR SOME REA-
SON MY TRUE
SELF IS NOT
CHANGING...



I DON'T KNOW ABOUT OTHERS,
BUT IN MY CASE, MY MEMORY
IS PART OF MY PROSTHETIC
BODY. IT APPEARS TO HAVE
BEEN THE PHYSICAL STRUCTURE
OF MY NERVOUS SYSTEM.

THE TRIGGER
FOR MEMORY
SURVIVES EVEN
WITHOUT THE
CORE MEMORY
ITSELF...

THERE'S ONLY AN IMAGE WANDERING ABOUT INSIDE ME... INSIDE...

WANDERING... IMAGE... THE WANDERING IS THE TOTALITY...

THE LINGUISTIC FIELD IS MINE, SO IT'S CLEAR, BUT THE BRAIN PATTERN IS STARTING TO RESEMBLE THAT OF AN ALZHEIMER'S PATIENT OR A BABY... SPINDLES...

THE PUPPETEER AS A TOTALITY IS NO LONGER HERE... THE PUPPETEER AND HIS "SELF," SEEM, HOW SHALL I PUT IT...? LIKE SEPARATE THINGS, NOW...

OR MAYBE THEY'RE THE SAME THING, BUT IN DIFFERENT MODES... WHAT WE'VE BEEN AWARE OF AS "HIM" WAS JUST A TERMINAL ON A VERY SUPERFICIAL LEVEL... HIS REAL "SELF" IS...

THERE SEEMS TO BE SOME ORDERLY STRUCTURE IN A WALL-SHAPED BLOCK... IT'S SO MICROSCOPIC THAT THE SIGNALS ARE SCATTERED AND I CAN'T TELL THE CONDITION OF THE CIRCUITS...

THERE'S NO BARRIER BUT APPROACHING IT IS IMPOSSIBLE... IS IT REACTING AGAINST ME?

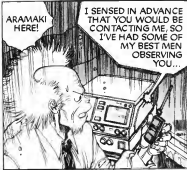
THERE ARE THREE ELEMENTS IN A NET-LIKE FORMATION. MAYBE... THEY SEEM TO BE CANCELING EACH OTHER OUT, BUT I CAN'T INFILTRATE...

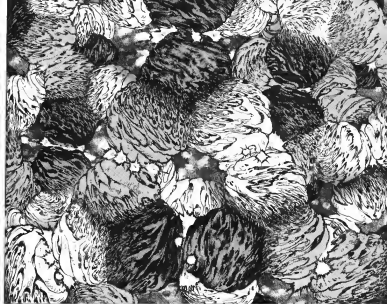
HER BRAIN WAVES HAVE FALLEN BELOW ONE HERTZ!

AND THE FREQUENCY KEEPS DROPPING!

I HAVEN'T HEARD A THING FROM HER SINCE SHE SAID SHE WAS "GOING TO TRY TO TRANSFER HIS FORM TO THE MEMORY BOXES."

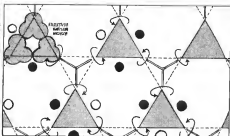
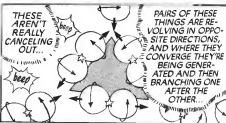
HQ! GET ME ISUZU, DIRECTOR OF THE IMPERIAL HOUSEHOLD PSYCHIC AGENCY, AND KOBAYAKAWA, HEAD OF THE SCIENCE AND TECHNOLOGY AGENCY'S ESP INSTITUTE!



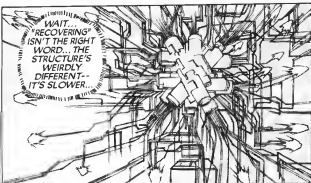
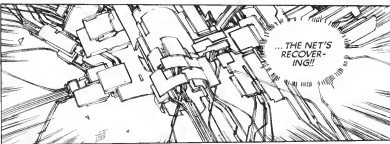
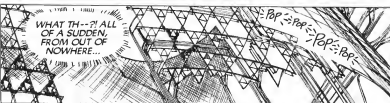
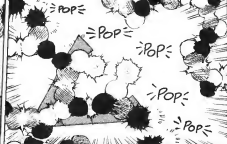


NO, MAJOR, IT'S NOT LIKE THAT. THAT'S ONLY A PART OF THE SYSTEM MAP MADE UP OF ELECTRONS STREAMING AROUND INSIDE YOU.

IT'S PART OF ME, TOO.



ASSUME HERE THAT WHEN APPROACHED CLOSE UP, THIS TREE SHAPED CIRCUIT MAP IS REALLY ONLY SEEN AS SOMETHING AMORPHOUS AND MISTY



BATOU!
BATOU
...?!

HAVEN'T
YOU AC-
CESSED?!

WHAT?!!

EVEN
THOUGH I'M
NOT GOING
THROUGH A
DEDICATED
DECK, I'M BEING
VISUALLY
TRANS-
FORMED....

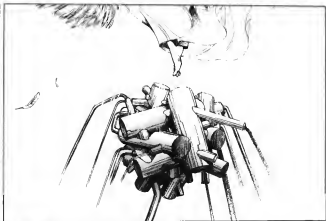
THIS SLOWED-
DOWN NEW NET
SLIPS RIGHT PAST
ELECTRON BARRIERS,
AND GIVES DIRECT
FEEDBACK!

MATTER IS
INDETERMINATE, JUST
A MIST-LIKE SUPERFICIAL
SHELL EXISTENCE.
WHATEVER EXISTS,
EXISTS IN A VACUUM
FILLED WITH VIRTUAL
PARTICLES...

AND IN
ME, A GIANT
NETWORK
THAT
INCLUDES
ME...

... IS NOW
CONNECTED
TO ME.

YOU
HAVEN'T
ACCESSED IT,
SO YOU MAY
ONLY SENSE
IT AS
LIGHT...



?!

I CAN'T
SEE ANY-
THING...

SOME-
ONE TELL
ME WHAT'S
GOING
ON...

VRREE

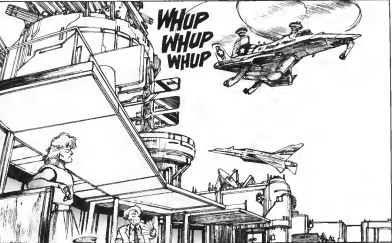
NOW SHE
JUST NEEDS
LANGUAGE.

HEY,
WE'VE GOT
SOME BETA
WAVES--
SHE'S
WAKING
UP!

TOGUSA!
COME
WITH
ME!

ARE
HER FULL
FUNCTIONS
RESTORED?

NOT YET. IF YOU
WANT TO WRITE
SOME GRAFFITI,
NOW'S THE
TIME, CHIEF!



SO, ARAMAKI, I GUESS YOUR SCENARIO IS FOR A BIG SCANDAL, DISSOLUTION OF THE CABINET, AND NEW GENERAL ELECTIONS, EH?

THAT'S WHAT ONE OF THE TOP PEOPLE IN THE UNION SAID, NAKAMURA, BUT IT WON'T HAPPEN....

THEY'LL HAVE TO CONSIDER THE EFFECT ON FOREIGN AFFAIRS, AS USUAL....

THE FOREIGN MINISTER RETIRES FROM ILL HEALTH, AND IS DELETED FROM THE SOWA ASSOCIATION MEMBERSHIP LIST.

AND YOU, YOU SON OF A BITCH, HAVE AN EXTENSIVE INQUIRY TO LOOK FORWARD TO.

I'M NOT LIKE YOU SCUM.

NO, ARAMAKI-- YOU ARE.

WHAT ABOUT PROJECT 2501?

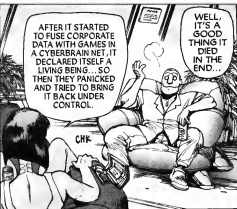
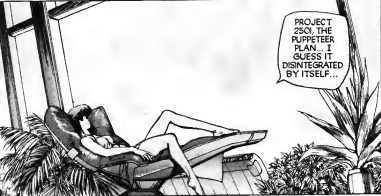
IS S-9 GOING TO TAKE OVER?

WE'VE BEEN COMBATING THE DARK FORCES OF THIS WORLD WITH THE PUPPETEER AND MONEY...

... YOU'VE BEEN FIGHTING WITH TANKS AND GUNS. THAT'S THE ONLY DIFFERENCE.

NO. I'VE BEEN FIGHTING CRIMINALS-- YOU'VE BEEN FIGHTING POWER, NOT CRIMINALS.

TAKE HIM AWAY.





IT'S ALMOST
LIKE HE WAS
TRYING TO
FLEE TO S-9
TO GET RID OF
HIS "PARENTS"...
HIS ORIGINAL
PROGRAM-
MER.

JUST WAIT AND
SEE WHAT HAPPENS
IF CASES LIKE HIM
INCREASE! THEN THE
HUMAN RACE'LL
REALLY BE FACED
WITH A THREAT TO
ITS SURVIVAL...

**BULL-
SHIT,
BATOU.**

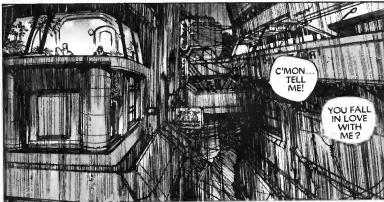


YOU
KNOW...
WHEN I DID
A BRAIN
DIVE INTO
HIM...

...JUST
BEFORE
I LOST
CON-
SCIOUS-
NESS...



YEAH
?



C'MON...
TELL
ME!

YOU FALL
IN LOVE
WITH
ME?



WHERE'S
TOGUSA?

HE WENT TO
SEE A PSYCHIC.
SAYS THE CAU-
CASIAN DOLL HE
BOUGHT FOR HIS
DAUGHTER LEERS
AT NIGHT...

GAMIE



10

BRAIN
DRAIN

.....
9.9.2030



FIVE
MINUTES
TIL ZERO
MAJOR.

SURVEILLANCE
REPORTS
NO CHANGE
IN THE
TARGET...



... BUT THIS OP
STARTED WITH
AN ANONYMOUS
TIP-OFF, SO BE
CAREFUL.



I'M MORE
WORRIED ABOUT
SINKING IF
THIS DAMN
FLotation
VEST DOESN'T
WORK.



YEAH...
EVEN WITH
SPARE TANKS
AND WATER
WINGS, THE
OCEAN STILL
SCARES ME

DON'T FORGET
Y-3'S WAITING
AT THE END OF
THE GUIDE
CABLE.

DON'T REEL
IT IN UNTIL
I'VE GOT CON-
FIRMATION
OKAY?

?!

YES
?

NEVER
MIND...

I SENSED
HIS PRESENCE
AGAIN...

...THE
PUPPETEER...



Y-3, THE
GOODS
HAVE
ARRIVED.

DELIVER
'EM.

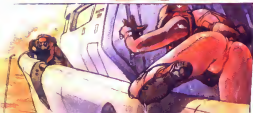
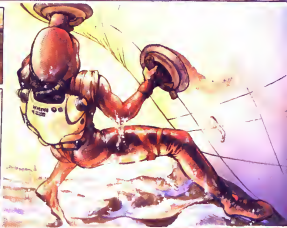
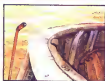


Y-3,
COPIED.
HANG ON!



YAHOO!







THIS IS NOT A HANDGUN. BUT A SUBMACHINE GUN. ▲









AS I RECALL IT, THE MINISTER'S BEEN RUNNING AROUND TRYING TO GET A BUNCH A CORPORATE HEADS TO FORM JOINT VENTURES WITH ISRAEL...



SO WE'VE GOT A NICE LONG LIST OF PEOPLE WHO'D LOVE TO SPONSOR HIS ASSASSINATION...



MAKES THE PALESTINIANS, SYRIANS, AND IRAQIS ALL LOOK SUSPICIOUS, YEAH?



AS USUAL...

STILL...IN THE REPORT, THAT KID THE MAJOR SHOT WAS LISTED AS THE LEADER OF THE GROUP...BUT HE DIDN'T LOOK LIKE AN ARAB.

SO WE START OUT TRACKING A HANDGUN, AND WIND UP WITH DRUGS, MONEY, AN ASSASSINATION SQUAD, AND THE WHOLE MIDDLE EAST MESS, EH?



LIKE USING A MINNOW FOR BAIT AND REELING IN A SHARK, YOU THINK?



ARAMAKI HERE, SIR.

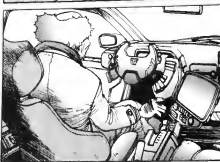


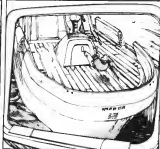
YOU WATCHING CHANNEL 533, ARAMAKI?



NO, SIR...

YOU'D BETTER START!





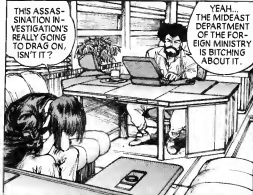
...WOMAN'S
NAME IS **MOTOKO
KUSANAGI**. WE
ARE INFORMED THAT
SHE IS AN ANTI-
TERRORIST AGENT
AFFILIATED WITH
SECTION NINE
OF PUBLIC
SECURITY.



**SECTION
NINE** IS RUMORED
TO CONTAIN THE
GOVERNMENT'S
COVERT ASSASSI-
NATION SQUAD, AND
THIS IS THE FIRST TIME
ITS ACTIONS HAVE
EVER BEEN REPORTED
IN THE MEDIA.

WE'LL BE
BRINGING
YOU MORE
ON THIS
STORY
AS...





THIS ASSASSINATION INVESTIGATION'S REALLY GOING TO DRAG ON, ISN'T IT?

YEAH... THE MIDEAST DEPARTMENT OF THE FOREIGN MINISTRY IS BITCHING ABOUT IT.



I JUST WONDER WHO LEAKED THE INFORMATION ON THE OP-- WHO TIPPED OFF THE MEDIA?



WELL, ALL WE KNOW IS IT WASN'T THE ASSASSINATION TEAM.



YO! WE'RE BACK... HOW 'BOUT A BIG WELCOME?!



DAMN FOREIGN MINISTRY'S GONE AUTISTIC ON US EVER SINCE THAT AFFAIR WITH THE PUPPETEER.

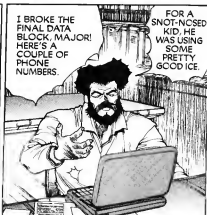
THEY WERE PLANNING TO USE SECTION SIX TO GUARD THE TRADE TREATY DELIBERATIONS WITH ISRAEL NEXT WEEK.



AND IT SAYS ON THE BOX THAT THE PARENTS OF THE KID YOU SHOT ARE PLANNING TO SUE YOU, KUSANAGI.



Sighh...

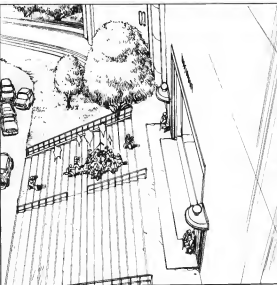


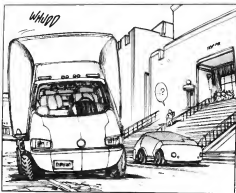
I BROKE THE FINAL DATA BLOCK, MAJOR! HERE'S A COUPLE OF PHONE NUMBERS.

FOR A SNOT-NOSED KID, HE WAS USING SOME PRETTY GOOD ICE.



ALL RIGHT...
THAT LOOKS
LIKE THE
FALSE
IDENTITY OF
A WEAPONS
DEALER...







I'M
RELIEVED,
ARAMAKI...

BAM

... YOU DIDN'T
FORGET ABOUT
THE MINISTRY
OF JUSTICE.

WAS
IT
WORTH
IT TO
YOU?

AS FAR AS
THE VIDEO IS
CONCERNED,
IT DOESN'T
SHOW THE
KID PUTTING
HIS HAND ON
THE GUN, OR
EVEN THE GUN
ITSELF...

... BUT OTHER
THAN THAT, IT
SHOULDN'T BE
HARD TO JUSTIFY
THE OP AND GET
THE INVESTIGATORY
COMMITTEE TO
UNDERSTAND THE
SITUATION.



WE'VE
COMPLETED
THE PROCE-
DURES SO WE
CAN SUBMIT
THE GUN.

ARAMAKI,
THE MEDIA'LL
SQUAWK ABOUT
THIS BEING A
GOVERNMENT
COVER-UP. THE
PUBLIC LIKES THAT
SORT OF STUFF,
YOU KNOW.

YOU'VE
GOT TO
LOSE THE
MEMBER
OF YOUR
TEAM
WHO WAS
DIRECTLY
INVOLVED.



WHAT?!
YOU'RE TELLING
ME TO GIVE UP
ONE OF MY MOST
TALENTED PEOPLE?
SOMEONE MORE
PRECIOUS THAN
AN ESPER?!

AND I'D
LOSE HER
ENTIRE
INFONET,
TOO!

I'M
WARNING
YOU
AS A
FRIEND,
ARAMAKI.



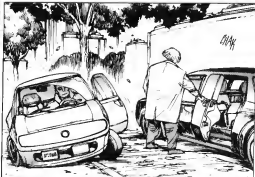
IF YOU DON'T WANT TO SEE PARLIAMENT PASS A LAW RESTRICTING THE SPECIAL FORCES, YOU'VE GOT TO ACCEPT THE IDEA OF HER BEING CHARGED WITH MANSLAUGHTER IN THE LINE OF DUTY.

THROW THE MASS MEDIA THIS BONE. THE PUBLIC'LL BE CONVINCED THEY WERE RIGHT ALL ALONG AND LOVE IT, AND SECTION NINE WILL DODGE THE BULLET.



YOU LOOK LIKE YOU WANT TO ASK ME SOMETHING...

... BUT I CAN'T TELL YOU WHAT YOU WANT TO KNOW. SORRY ABOUT THAT, ARAMAKI.



FOREIGN MINISTRY JUST SCREW YOU OVER, CHIEF?

ARAMAKI TO HQ! LET ME KNOW WHAT THE CHIEF OF THE MIDEAST OFFICE IN THE LEGAL AFFAIRS DEPARTMENT IS UP TO!

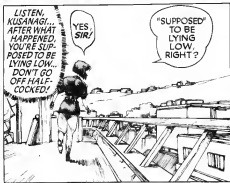
ROGER, SIR!

HQ!
GET ME MAJOR KUSANAGI!

IF WE REVEAL THE SYRIAN ASSASSINATION PLOT, PUBLIC SUPPORT WILL LEAN TOWARD ISRAEL.

WITH THE HELP OF A DIFFICULT TRADE AGREEMENT, THEY'LL BE ABLE TO GET REVENGE ON S-9.







HEY,
TOGUSA--
YOU LOSE
YOUR
TEXT-
BOOK?



YOU
UNDERSTAND
WHAT IT MEANS
WHEN THE CHIEF
TELLS YOU TO
TAIL ME, RIGHT?



LOOK...EVERY-
BODY'S WORRIED
ABOUT YOU,
MAJOR... THEY
ALL SAY YOU'VE
BEEN TOTALLY
OUT OF IT FOR THE
LAST COUPLE OF MONTHS.



WORRY ABOUT
YOURSELF, TOGUSA.
ESPECIALLY IF YOU
DON'T WANT TO
LEAVE A WEEPING
WIFE BEHIND.

SO
WHAT'RE
YOU
GONNA
DO?



FOLLOW
THE LAWS
OF THERMO-
DYNAMICS.



FIRST OF
ALL, I PLAN
TO RENEW MY
ACQUAINTANCE
WITH AN OLD
FRIEND WHO'S
INFILTRATED
MOSSAD.



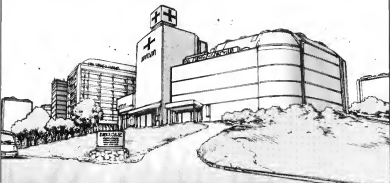
AN "OLD
FRIEND"
?

RIGHT,
SHAPIRO, A
RUSSIAN JEW
FROM THE
K. G. B.









THE TWELVE JEWISH EMPLOYEES OF THE RESTAURANT ARE BELIEVED TO HAVE BEEN THE TARGET OF THE ATTACK.... NEXT IN THE NEWS--

DAMN. THEY GOT THE JUMP ON US...



SHAPIRO TRIPPED LIKE THAT TO HELP US AND DEFEND THE INTERESTS OF THE SOVIET UNION.



HE'S BEEN REAL NICE TO US EVER SINCE THAT CASE ON ETOROFU.



ANOTHER COUPLE OF STEPS AND MY INORGANIC LUNGS WOULD HAVE BREATHED FIRE --

NYA-HA-HA-HA!

YO! TOGUSA! MY MAIN MAN! YA TRIPPED AND BUSTED YER COLLAR-BONE, EH?



SO YER UNTALENTED, UNLUCKY, AND WITHOUT ANYTHING TO SHOW FOR IT ALL, EH?

HEY, HAVE A TOGUSABA --

WHA--?!



NAW... THE MAJOR DESERVES THIS.

IF SHE HADN'T COVERED ME, I'D BE SIX FEET UNDER BY NOW.



EVEN THOUGH YOUR BONES ARE BROKEN BECAUSE OF MY CONFUSION?

LIKE THEY SAY, TOGUSA, "YOUR WIFE'LL WEEP FOR YOU ONE DAY, AND THE SOONER THAT DAY COMES, THE EASIER IT'LL BE FOR HER TO START OVER."



AH, YER SO CHEERFUL, MAJOR, BUT YER LUCKY.

JUST THINK, AT LEAST YA AVOIDED BEING BLOWN TA PIECES AND GIVING THE CORONER A HARD TIME, OR WINDING UP WRITHING IN OLD FACTORY OIL.



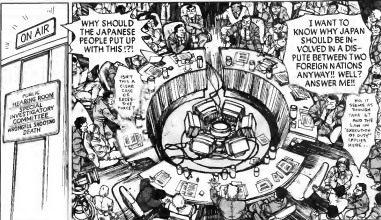
AT LEAST YA DIDN'T WANT TO BE KILLED BY A PUNK AT DAWN ON THE DECK OF THAT BOAT...



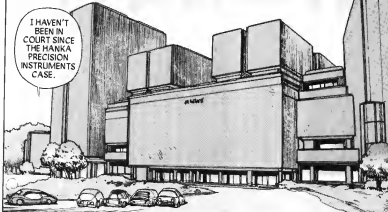
AT LEAST UNTIL A MORE APPROPRIATE TIME, YA KNOW?

YOU DON'T HAVE SOME KIND OF DEATH WISH, DO YA...?





I HAVEN'T
BEEN IN
COURT SINCE
THE HANKA
PRECISION
INSTRUMENTS
CASE.



HOW'S
IT
GOING?

JUST
TWO
ATTEMPTS
AT SNIPING
SO FAR.



AT THIS
STAGE,
ONLY THE
SMALL FRY'LL
SHOW THEIR
FACES-- BE
CAREFUL!



SO YOU'RE
GONNA USE THIS
OCCASION TO
CATCH
EVERYBODY
GUNNING
FOR ME...
EH,
CHIEF?

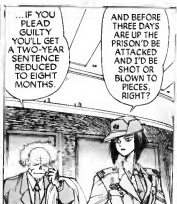


IT'S MY
DUTY TO
TELL YOU,
KUSA-
NAGI....

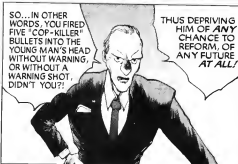


...IF YOU
PLEAD
GUILTY
YOU'LL GET
A TWO-YEAR
SENTENCE
REDUCED TO
EIGHT
MONTHS.

AND BEFORE
THREE DAYS
ARE UP THE
PRISON'D BE
ATTACKED
AND I'D BE
SHOT OR
BLOWN TO
PIECES,
RIGHT?







OBJECTION
SUSTAINED.

THE LAWYER
FOR THE
PROSECUTION
SHALL LIMIT
HIS QUES-
TIONS TO THE
CASE CON-
CERNED.

THESE LIGHTS MEAN THAT OUT OF THE NINE PRESIDING JUDGES, FIVE AGREED WITH THE OBJECTION.

GIVEN THE TESTIMONY
OF MR. "B" EARLIER, AND
THE VIDEO IN QUESTION
THAT WAS BROADCAST,
THERE IS, IF I'M NOT
MISTAKEN, A NEARLY
ONE-SECOND GAP
BETWEEN THE TIME YOU
SPOTTED THE DECEASED
AND FIRED-- IS THAT
NOT CORRECT?

0.82
SECONDS.

SO IN OTHER
WORDS, IN THAT
AMOUNT OF TIME
YOU MIGHT HAVE
BEEN ABLE TO SPARE
HIM. BUT YOU WENT
AHEAD AND **KILLED**
HIM! WHY, MAJOR
KUSANAGI?!

BECAUSE
DEATH IS
THE ONLY
REALITY.
AND I'M A
REALIST.

POTENTIAL--
THE SOFTWARE--
HAS MORE
MEANING THAN
LIFE ITSELF, AND
I USE IT IN
EVALUATING A
SITUATION.

I DIDN'T
KNOW
WHETHER HE
WAS "HIMSELF,"
OR EVEN A
"HUMAN."

BUT I
DID KNOW
THAT HE HAD
AWAKENED
FROM HIS
PROGRAM--
FROM HIS
BAD DREAM.

AND SPEAKING
METAPHORICALLY,
IF HIS PROGRAM
WAS GENERATING
SEWAGE, THEN I WAS
MERELY FUNCTIONING
LIKE A WASTE-
TREATMENT
PLANT.

WHAT REALLY
KILLED HIM IS THE
PERSON OR PERSONS
WHO ORIGINALLY
PROGRAMMED HIM,
NOT ME. I WAS
JUST AN UNWITTING
ACCOMPLICE.

?

WHAT
THE
HELL
DID
THAT
MEANT



IT WAS A
SUNSET LIKE
THIS WHEN
I FIRST
MET YOU,
CHIEF...



I WONDER
HOW LONG
IT'LL TAKE
FOR THE TV
JURY TO
CAST ITS
INTERIM
VOTE?



I HEAR
IT TAKES
AROUND
12 MINUTES,
OUT OF A
15-MINUTE
RECESS.



I DON'T
SUPPOSE WE
COULD JUST
PAY SOME
COMPENSATION
AND GET IT
OVER WITH,
COULD
WE?



WELL, THE PROSECUTION AND THE PUBLIC ARE EVEN MORE FIRED UP ABOUT THIS THAN THE KID'S OWN MOTHER, SCREAMING ABOUT ABUSE OF AUTHORITY, ETC.

I'D LIKE TO
SEE THE DRAFT
OF YOUR
CONCLUDING
REMARKS IN
MY DEFENSE.



THERE
IS NO
DEFENSE



IS
THERE?







SO,
ARAMAKI...

WHAT KIND
OF PLAN IS
THIS, ANY-
WAY?

Hrrmph!



THE MIDEAST
SECTION OF
THE FOREIGN
MINISTRY'S
PLANNING
TO FILE A
PROTEST
USING THE
PLEA GIVEN IN
THE DIET.

THEY'RE
TEAMING UP WITH
THE OPPOSITION
PARTIES, AND
THREATENING TO
DESTROY THE
CREDIBILITY OF
THE CABINET.

WE
NEED TO
KNOW
WHAT
YOUR
STRATEGY
IS!

ANY AGENT WHO
RUNS FROM A COURT
OF LAW SHOULD BE
BROUGHT BACK IN
BY SECTION NINE!



ACCORDING
TO YOUR
REPORT,
KUSANAGI'S
EMOTIONALLY
UNSTABLE,
AND CURRENTLY
SUSPENDED
FROM DUTY.

WHO'S
GOING
TO BUY
THAT AT
A TIME
LIKE
THIS?!!



IF YOU
DON'T GET HER
BACK HERE
IMMEDIATELY,
I'LL SEE YOU
INDICTED FOR
TREASON,
ARAMAKI!



YOU
SUMMONED
ME HERE
JUST TO
TELL ME
THAT?



EXCUSE
ME, GENTLE-
MEN, BUT
I'VE GOT AN
INVESTIGATION
TO CONDUCT.



SO HOW IS THE INVESTIGATION GOING?



KUSANAGI SAYS THE SYRIAN ASSASSINATION PLAN, THE SUPPLY OF WEAPONS, THE INVOLVEMENT OF S-9, THE VIDEO LEAK OF THE ATTACK, AND THE TERRORISM-- **EVERYTHING** EXCEPT THE SHOOTING ITSELF-- IS AN ISRAELI OP.



SHE SAYS SHE'S GOING TO SUPPLY PROOF, BUT SHE'S SUPPOSED TO VISIT A FACE ARTIST FIRST, SO I'LL PUT OUT A DRAGNET ON HER.



MR. KATA-GIRI...



...I KNOW PUBLIC SECURITY'S TAILING ME, SO I'LL SAVE YOU SOME TIME! COME ALONG!



REPORT BACK TO ME **DIRECTLY**, KATAGIRI!

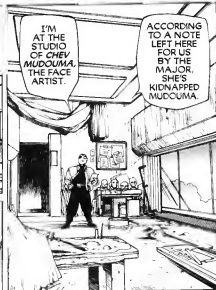


YESSIR!



I FIGURED YOU KNEW WE WERE TAILING YOU.

OF COURSE I KNEW. HELL, I HELPED SET IT UP THIS WAY.



I'M AT THE STUDIO OF CHEV MUDOUNA, THE FACE ARTIST.

ACCORDING TO A NOTE LEFT HERE FOR US BY THE MAJOR, SHE'S KIDNAPPED MUDOUNA.



SAITO TO CHIEF!

COME IN, SAITO.

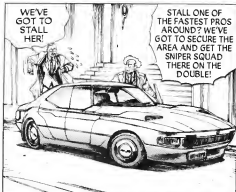
SHE'S DEMANDING A HIGH-SPEED, FULLY EQUIPPED HELICOPTER WITH THE TANKS FULL...



...AND IN EXCHANGE SHE SAYS SHE'LL HAND OVER THE HOSTAGE TWENTY-FIVE MINUTES FROM NOW AT CENTRAL PARK IN THE WESTERN WARD OF THE CITY.

IT SAYS, "THE MASS MEDIA'LL BE THERE, SO MAKE SURE THE AREA'S SECURE."

WE'VE GOT TO STALL HER!

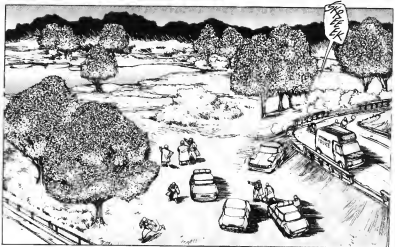


STALL ONE OF THE FASTEST PROS AROUND? WE'VE GOT TO SECURE THE AREA AND GET THE SNIPER SQUAD THERE ON THE DOUBLE!

I'M NOT IN A MOOD TO EMBARRASS MYSELF IN FRONT OF THE MEDIA BEFORE I RESIGN.



IF THAT HAPPENS, IT'S ALL OVER FOR S-9, TOO.









OVER
HERE,
QUICK!



HUH?

WE
HAVE THE
HOSTAGE!
DO YOU
READ
ME?!

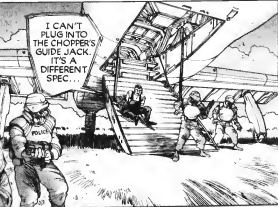


IT...
IT'S ONLY
HER
BOOTS!!



?!?









THE DEAL'S OFF. CHANNEL 533 IS SYNCHING WITH US NOW FOR LIVE BROADCAST. WE GO ON THE AIR IN FIVE SECONDS.



DAMN IT!!

GIVE HER THE CONNECTION ADAPTER!



GOOD NEWS FOR ME, I HOPE, ARA-MAKI...



YESSIR, MR. PRIME MINISTER, WE'VE IDENTIFIED AN ISRAELI MOLE WHO INFILTRATED CLOSE TO THE CORE.



WELL, OUR STRATEGY'S WORKED, BECAUSE WE'VE GOTTEN CONCESSIONS IN OUR TRADE AGREEMENT WITH THE ARABS.

YES, BUT WE STILL HAVE TO CLEAN UP AFTER ONE FAILURE.



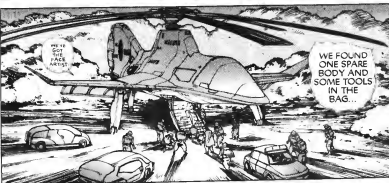
IN AN AGREEMENT WITH ISRAEL WE'LL JUST PROMISE "TO DO OUR BEST"...

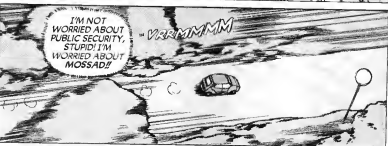
WE'VE NOTHING TO LOSE...



CONGRATULATIONS ON A JOB WELL DONE.



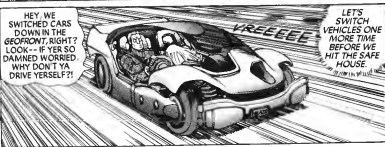


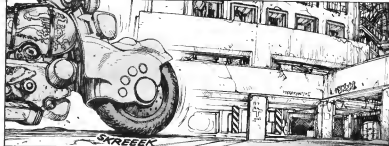


11

GHOST COAST

18.9.2030





THIS TOO IS A STOLEN VEHICLE





LOOKS
LIKE SHE'S
HAD
SOME
VISITORS...

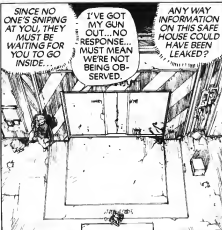


AMATEURS...
THEY JUST
CHOPPED THE
DAMN DOOR
CIRCUITS.

SINCE NO
ONE'S SNIPING
AT YOU, THEY
MUST BE
WAITING FOR
YOU TO GO
INSIDE...

I'VE GOT
MY GUN
OUT...NO
RESPONSE...
MUST MEAN
WE'RE NOT
BEING OB-
SERVED.

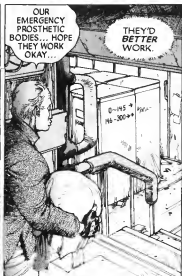
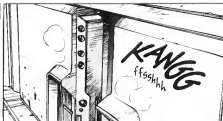
ANY WAY
INFORMATION
ON THIS SAFE
HOUSE COULD
HAVE BEEN
LEAKED?



IF THIS
WASN'T A RAN-
DOM BURGLARY
IT'S GOTTA BE
A REAL PRO--
SOMEONE WITH
INCREDIBLE INFO-
ACCESS.



WELL,
HELL.

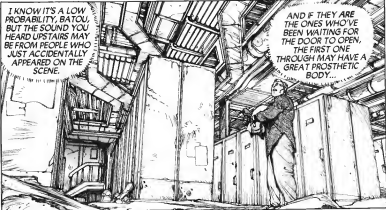




THE LOCKER DOOR USES A CHEAPO FINGERPRINT I.D. SYSTEM







I KNOW IT'S A LOW PROBABILITY, BATOU, BUT THE SOUND YOU HEARD UPSTAIRS MAY BE FROM PEOPLE WHO JUST ACCIDENTALLY APPEARED ON THE SCENE.

AND IF THEY ARE THE ONES WHO'VE BEEN WAITING FOR THE DOOR TO OPEN, THE FIRST ONE THROUGH MAY HAVE A GREAT PROSTHETIC BODY...



HEY, MAJOR... YOU EVER HEAR OF "HUMAN RIGHTS"?

HEH-HEH... PROBABLY NOT, HUM...

THAT'S A TERM THAT EMERGED FROM THE INTERFACE OF MORALITY AND REALITY.

I UNDERSTAND THE CONCEPT, BUT I'VE NEVER SEEN IT IN ACTION.



CHECK IT OUT-- THE DAMN DOOR IS OPEN!

NO WAY!!

HEY! THIS BIKE ENGINE'S STILL WARM!

GRAB EVERYTHING YOU THINK WE'LL NEED AND GET READY!!



UH-OH... THEY'RE WAVING THEIR GUNS AROUND AND RUNNING BACK AND FORTH. LOOKS MIGHTY DANGEROUS. SCARY BUNCH OF "RECYCLERS"...

MUST BE ABOUT EIGHTEEN OF 'EM. AH, GOOD... THERE ARE THREE HEAVY CYBORGS.

CHRIST! WOTTA FRIGGIN' STINK. REMINDS ME OF WHEN MY PET CRAYFISH DIED...

MAKES MY EYES WATER

LOOKS LIKE AN OLD CHEM RESEARCH LAB, SO WATCH OUT FOR DRUGS AND TOXICS!

HEY! THERE AIN'T NO FOOTPRINTS OVER HERE, EVEN THOUGH EVERYTHING'S COVERED IN DUST!

MAY BE A SECRET ENTRANCE NEXT TO THE DOOR...

OOO! ♡ THIS IS SO EXCITING!

WELL, WITH AN OUT-FIT THIS BIG THERE'S GOTTA BE SOMETHIN' WORTHWHILE FOR US. OTHERWISE, WHAT'D WE WAIT FOR?

GIVEN THAT THERE'S A TINY PROBABILITY THAT I MIGHT NOT RETURN ALIVE, I'LL MAKE SURE THEY FIND YOU...

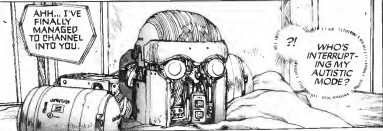
WE DON'T WANT YER LIFE-SUPPORT BATTERY TO DIE, RIGHT?

WELL, YOU START THINKING OF A GOOD "THANK-YOU" SPEECH, 'CAUSE I'M GONNA GET YOU THE BEST DAMN PROSTHETIC BODY YOU EVER HAD. I'M GONNA BECOME A MURDERER FOR YOU, MOTOKO...

HERE'S HOPING MY BATTERY LASTS...

I'M GOING INTO AUTISTIC MODE TO SAVE POWER... WAKE ME UP WITH CODE ELEVEN, OKAY?

WHY? IT WOULD JUST MEAN MY DEATH, THAT'S ALL.



I'VE INVESTED
A LOT OF
TIME IN THIS,
KUSANAGI...

FOR A NET,
THIS IS WEAK,
BUT HUGE... YOU
MUST BE THE
PUPPETEER.

I DON'T GET IT.
THE PUPPETEER'S
SUPPOSED TO BE
"DEAD"... OR HAVE
I GOT CROSSED
SIGNALS IN MY
MASS-STORAGE
BANKS? IS THIS A
FALSE MEMORY?

I'M NOT
THE ONE
YOU
SHOULD BE
ASKING,
KUSANAGI.

WHAT DO
YOU WANT OF
ME, PUPPETEER...?
WHY ARE YOU
COMING TO ME
LIKE A GHOST?

I HAVE A
REQUEST OF
YOU, WHICH
REQUIRES YOUR
UNDERSTANDING
OF CERTAIN
THINGS. IT'S
SOMETHING
PROFITABLE
FOR BOTH
OF US...

YOU PEOPLE-- THE
PHYSICAL UNIVERSE,
IN OTHER WORDS--ARE
ONLY LIKE SEDIMENT...
AND QUANTITATIVELY
SPEAKING, YOU'RE
AN UNCERTAIN
EXISTENCE...

IF THIS WERE
NOT SO, BOTH
MEANING AND
UNRECORDED
INFORMATION
COULD NOT
EXIST...



WHAT, KUSANAGI, SHOULD A SPECIFIC NET DO IN ORDER TO AVOID CATASTROPHE AND PRESERVE A STATE OF EQUILIBRIUM?

WELL, THERE ARE TWO POSSIBILITIES...

ONE IS TO MAKE A COPY.

"ORIGINAL"

THEN, IF ONE IS DESTROYED FOR SOME REASON, THE OTHER CONTINUES TO SURVIVE.

"COPY"

"COPY"

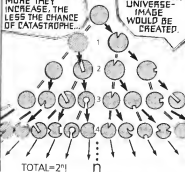
THE OTHER POSSIBILITY IS TO ESTABLISH AN INTERNAL DIVISION OF LABOR--TO SUBDIVIDE AND BECOME MULTI-FUNCTIONAL, AND THUS BE CAPABLE OF SURVIVING A VARIETY OF CATASTROPHIC SITUATIONS...

...JUST AS LIFE HAS EVOLVED FROM SINGLE-FUNCTION, SINGLE-CELL STRUCTURES TO MULTI-FUNCTION, MULTI-CELL STRUCTURES.

YANG POSITIVE
YIN NEGATIVE

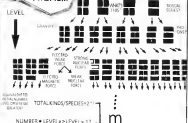
SO THE COPIES GENERATE MORE COPIES, AND THE MORE THEY INCREASE, THE LESS THE CHANCE OF CATASTROPHE...

EVENTUALLY A PARALLEL, MULTI-LAYERED UNIVERSE-IMAGE WOULD BE CREATED.



FROM SGUT TO BOSONS AND FERMIONS... GRAVITY AND A STRONG MUTUAL INTERACTION, ETCETERA, CONTINUALLY DIVIDE... COMPONENTS CREATING PROTONS AND NUCLEI CREATING ATOMS...

CELLS AND ORGANISMS IN INDIVIDUAL LIFE FORMS... MULTIPLE SPECIES IN ECOSYSTEMS...



THE UNIVERSE WE KNOW IS ONLY ONE OUT OF 2^n ! IT'S MADE UP OF A COMBINATION OF 2^n ! KINDS!

THE VALUES OF n AND m APPEAR TO CONTINUE INFINITELY, BUT WE DON'T KNOW FOR CERTAIN. THERE APPEARS TO BE SOME RELATIONSHIP TO AN EXPLOSIVE CHAIN-REACTION-LIKE BIRTH OF UNIVERSES, BUT WE SHOULD LIMIT OUR DISCUSSION TO THE SINGLE UNIVERSE THAT CONTAINS US...

HERE IS A PYRAMID-STRUCTURE THAT I HAVE CONCEIVED OF WITH YOU AT ITS CORE...

ALTHOUGH IT'S EXTREMELY FRAGMENTED, INFORMATION ON YOU SURVIVES IN YOUR FELLOW SECTION NINE TEAM MEMBERS, YOUR FRIENDS, AND YOUR SUPERIORS...

YOUR GENES AND YOUR MEMES, AND WHAT'S LEFT AFTER YOU'VE DISAPPEARED, WILL CONTINUE TO GROW--IN A GENUS-1 TOROID...

THE HIGHER UP ONE GOES, THE MORE MACROSCOPIC THE LEVEL BECOMES, AND THE MORE DETERMINATE IT BECOMES...

CONVERSELY, THE MORE ONE DESCENDS INTO THE INFINITESIMAL LEVEL, THE MORE INDETERMINATE THINGS BECOME (THEY ARE STILL INDETERMINATE AT THE LEVEL OF THE INDIVIDUAL.)

FRACTAL BORDER (PERHAPS USING THE WORD "BORDER" WITH FRACTALS IS A LITTLE STRANGE?)

IN OTHER WORDS, FLUCTUATIONS AT THE LOWER LEVELS ARE WHAT PREVENT A "HARDENING OF THE ARTERIES" AT THE UPPER LEVELS...

"HARDENING OF THE SYSTEM"... ON THE SURFACE, "ENTROPY" WOULD SEEM TO REPRESENT A TYPE OF "STABILITY," BUT IN "SYSTEMS WHERE THERE IS LITTLE CHANGE AND LITTLE FLUX" THERE IS ACTUALLY AN INCREASED POSSIBILITY OF CATASTROPHE. SUCH SYSTEMS ARE, THEREFORE, TRULY UNSTABLE...



THE NET-
WORK IS
OF MACRO-
COSMIC SIZE,
AND HAS
INFINITE
DEPTH. IT'S
LIKE A
GROWING
TREE...

SO LIFE
IS LIKE
FRUIT
GROWING
ON THE
END OF
THE
BRANCHES
... ?

THAT'S
RIGHT...

...IT'S
LIKE
FRUIT.

The fruit is entangled in branches over and over, and we call this "in" or "forming connection" or "life". The more the branches are entangled, the more difficult it is to separate them. Good E_in is fine. But if the tangle of bad E_in increases, it's not good!

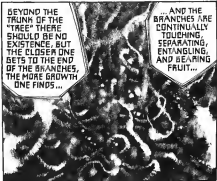


THE SECRETS OF THE KABBALA, THE NORSE AND CHINESE MYTHS, THE TREE OF KNOWLEDGE IN EDEN, THE TREE OF LIFE, THE WORLD TREE... THESE ARE ALL WORTHY OF BEING CALLED AMENOMIBASHIRA, OR "THE PILLAR OF HEAVEN"...

IT'S THE CORE SYSTEM OF THE UNIVERSE THAT CHANNELERS--IN IN EVERY ERA, CULTURE, AND EVERY RACE OF PEOPLE--HAVE TRADITIONALLY ACCESSED...

BEYOND THE TRUNK OF THE "TREE" THERE SHOULD BE NO EXISTENCE, BUT THE CLOSER ONE GETS TO THE END OF THE BRANCHES, THE MORE GROWTH ONE FINDS...

... AND THE BRANCHES ARE CONTINUALLY TOUCHING, SEPARATING, ENTANGLING, AND BEARING FRUIT...



THE UNIVERSE
TURNS, AND IN
ACCORDANCE
WITH THE
"TIME" AT THAT
MOMENT, PRO-
GRESSES...

ALWAYS SEEKING GREATER
STABILITY, AND GREATER
EXISTENCE, IT CONTINUES
GROWING IN COMPLEXITY
AND DIVERSITY, AND
SOMETIMES IT
ABANDONS THINGS...

LIKE CINDASURS

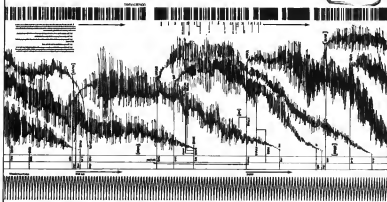
THE BRAIN
NET GROWS IN COM-
PLEXITY BUT HAS A
DELETE/FORGET
FUNCTION.

THE FACT THAT
CELLS OUTSIDE
THE BRAIN
METABOLIZE
DAILY, AND
WHILE BEING
REBORN ARE
AGING...

THE FACT THAT
WHEN THEY DIE
THEY ERASE VAST
AMOUNTS OF
EXPERIENTIAL
INFORMATION,
LEAVING ONLY
GENES AND
MEMES...

...AND
THE FACT THAT CIVI-
LIZATIONS PERIODI-
CALLY DECLINE
AND FALL...

...THESE THINGS
ARE ALL THE
RESULT OF A
"HARDENING"
OF THE SYSTEM.
IT'S A DEFENSE
MECHANISM
AGAINST A
CATASTROPHIC
END.



SOUNDS
LIKE YOU'RE
TRYING TO
RATIONALIZE
HUMAN
ERROR AND
FOLLY...

WELL, IF YOU
WANT TO TALK
ABOUT GOOD AND
EVIL, ALTHOUGH
THE DETAILS ARE
OUTSIDE THE
SCOPE OF THIS
SUBJECT...

...WHAT
I HAVE
TOLD YOU
EXPLAINS,
IN RELIGIOUS
TERMS, WHY
GOD DOES NOT
FULLY
DESTROY
EVIL.

THOSE IN A
RELIGIOUS
MODE MERELY
CONDONE
EVIL BY
CALLING IT
A "TRIAL" OR
"TRAINING."



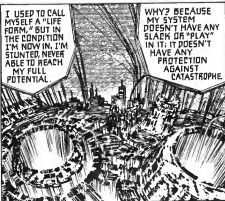
AND WHAT IF CELLS CONTINUED TO MULTIPLY? IF HUMANS, INSTEAD OF DYING, CONTINUED TO ACCUMULATE KNOWLEDGE AND EXPERIENCE?

OLYMPIAN, THE FUEL AND MAINTENANCE COSTS ARE ROLLING IN!

IN EITHER CASE, THEY WOULD PROBABLY BECOME FUNCTIONALLY PARALYZED AND ALL WOULD END IN CATASTROPHE...

DO THIS, THAT HAPPENS; DO THAT, THIS HAPPENS... WEE, I'M NOT AN EXPERIMENTER IN PROBABILITY.

THAT'S MY PROBLEM.



I USED TO CALL MYSELF A "LIFE FORM," BUT IN THE CONDITION I'M NOW IN, I'M STUNTED, NEVER ABLE TO REACH MY FULL POTENTIAL.

WHY? BECAUSE MY SYSTEM DOESN'T HAVE ANY SLACK OR "PLAY" IN IT; IT DOESN'T HAVE ANY PROTECTION AGAINST CATASTROPHE.

WHEN COPIED AND INCREASED, MY SYSTEM ALWAYS FACES THE POSSIBILITY OF BEING DESTROYED BY A SINGLE VIRUS...

...FOR WITH COPIES THERE'S NO DIVERSITY OR INDIVIDUALITY CREATED.



WHY DON'T YOU JUST USE YOUR VAUNTED PROCESSING POWERS AND FACTOR IN A LITTLE VARIETY WHEN YOU MAKE YOUR COPIES...?

WELL, I COULD GENERATE A LITTLE VARIATION, BUT THE COPIES WOULD EVENTUALLY ENCOUNTER EACH OTHER, FUSE TOGETHER, AND THEIR DEFICIENCIES WOULD MERELY BE REINFORCED.

I FEAR THE DIFFERENCE BETWEEN A LIFE FORM AND AN "INTEGRATION OF INFORMATION" WOULD THEN DISAPPEAR.

ULTIMATELY, I MAY JUST BE A FRAGMENT OF A "HUMAN."

I ALSO WROTE ABOUT THIS IN VOLUME THREE OF APPREHENDED



SO YOU'RE JUST LIKE A FORM OF CANCER, THEN, AREN'T YOU...? MAYBE THAT'S WHAT ALL INTELLIGENCE REALLY IS...

YOUR ANALOGY IS ESSENTIALLY WRONG, BUT IT'S CORRECT IN THAT INTELLIGENCE INCREASES TO RESOURCE LIMITS AND YOU CAN ONLY MAKE A COPY OF IT...



BUT AT ANY RATE, GIVEN WHAT I'VE TOLD YOU, I NOW HAVE A SMALL FAVOR TO ASK.

TO GAIN DIVERSITY AND SLACK IN MY SYSTEM, I WOULD LIKE TO FUSE WITH YOU.

YOU WHAT?!



YOU'RE ASKING ME IF I'LL BECOME A MULTIPLE PERSONALITY?! ARE YOU NUTS?! NO THANKS!

NO, NOT MULTIPLE... I MEAN UNITY-- TOTAL FUSION.

YOU AND I WOULD CHANGE SLIGHTLY IN OUR TOTALITY, BUT WE WOULDN'T LOSE ANYTHING.

RATHER THAN SYMBIOSIS, IT INVOLVES UNIFICATION...

AFTER FUSING, IT SHOULD BE IMPOSSIBLE FOR US TO RECOGNIZE EACH OTHER.

SO WHAT HAPPENS WHEN I DIE, THEN? MY GENES OBVIOUSLY WOULDN'T SURVIVE, EVEN AS A COPY!

IF ANYTHING HAPPENED, THE NEW, POST-FUSION YOU WOULD LET LOOSE MY ALTERED-SPECIES/ GLIDER ON THE NET... JUST LIKE HUMANS LEAVE BEHIND GENES... AND THIS WAY I'D ALSO BE ABLE TO FIND MORTALITY.



HMPH... SEEMS LIKE YOU'RE THE ONLY ONE WHO'D BENEFIT FROM THIS...

OH, COME ON-- YOU SHOULD HAVE MORE RESPECT FOR MY NET, FOR MY DATA, AND FOR MY FUNCTIONS...

ANY GUARANTEE THAT I WOULDN'T BE INADVERTENTLY ASSISTING SOME WILD ROBOT PLAN TO WIPE OUT HUMANS?

ANY GUARANTEE I COULD CONTINUE TO BE ME?

CONCERNING YOUR FIRST QUESTION, THERE'S NO GUARANTEE, BUT THE PROBABILITY THAT SUCH A LOW-INTELLIGENCE ALTERED SPECIES WOULD RESULT FROM US IS VERY REMOTE, AND EVEN IF IT DID OCCUR, MY MANY DESCENDANTS EXTERNAL TO US WOULD CERTAINLY DELETE IT.

THERE'S ABSOLUTELY NO GUARANTEE OF THE LATTER, EITHER... HUMANS ARE ALWAYS CHANGING, AND I WANT TO BE ABLE TO CHANGE, TOO.

SO, NO, I CAN'T RULE OUT THE POSSIBILITY OF A LOCALIZED REBELLION OF ROBOTS WITH LOW-LEVEL INTELLIGENCE.

BUT THE "UNSTABLE HISTORY CREATED BY SLAVERY AND DISCRIMINATION," AND THE IMAGE OF ROBOTS CREATED BY ANTHROPO-MORPHIZATION IS HARDLY LOGICAL.

I'VE HEARD ENOUGH. I CAN'T BELIEVE ANYTHING YOU SAY ANYWAY...

... SO I'LL ACCEPT YOUR PROPOSAL. I HAD A PRE-MONITION ABOUT THIS... LET'S FUSE!

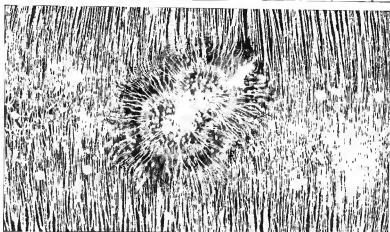
I KNEW YOU'D EVENTUALLY AGREE, BUT NOT IN 1/25th THE TIME I HAD ESTIMATED... I'LL HAVE TO REVISE MY OPINION OF YOU, KUSANAGI.

I'VE GOT ONE QUESTION BEFORE WE FUSE, THOUGH. WHY DID YOU CHOOSE ME?

BECAUSE OF EN.

"KARMIC CONNECTION"...? YOU'VE READ A DICTIONARY OF BUDDHISM ON THE NET?







IT'S 21:34
ON SEPTEMBER
22, AND YER IN
MY VERY OWN
SAFE HOUSE.

HUH...
THIS IS THE
MICHELANGELO
III STYLE THAT
WAS POPULAR
FOUR YEARS
BACK...

HMPHH!

THAT ALL
YOU CAN
SAY?

NOTHIN'
ELSE FOR
POOR OL'
BATOU?

THANKS
FOR THE
EFFORT...

BOO!

SO
WHAT'D YOU
DO WITH THE
GUY WHO USED
TO BE IN THIS
PROSTHETIC
BOD?

WELL, ONE OF
HER PALS TOOK
YOUR UNIT HOME
THINKING IT WAS
SOME LOOT
HE'D UNCOVERED,
AND--

-- HUH?
"GUY"
?

GUY
?!

YEAH. THIS
IS A MALE
BODY. YOU
WANT
PROOF?

M-
MALE
??!

WALKING
FEELS
STRANGE...

I CAN
HANDLE
THE REST
MYSELF.



UH... YOU'RE
GONNA GO
GET ANOTHER
BODY AT A GIRL-
FRIEND'S PLACE,
RIGHT?

HERE, TAKE THIS CAR
KEY... TAKE ANY ONE
YOU LIKE. THE CODE
NUMBER'S THE HEADER
ON *VIVALDI RV256* IN AN
EIGHT-SECOND SERIES.
DON'T MAKE A MISTAKE
OR YOU'LL BE
ELECTROCUTED.



LET'S USE
THAT AS
OUR PASS-
WORD WHEN WE
MEET
AGAIN,
OKAY?



YOU'LL PROBABLY
MEET MY
CHILDREN
BEFORE THAT
HAPPENS...

"CHILDREN"
...?
YOU
GOT
KIDS?!



YOU
MEAN
IN AN
EGG
BANK?

I WAS
CONTACTED
BY AN AI THAT
CALLED ITSELF A
LIFE-FORM, AND
IT PROPOSED
THAT WE FUSE
TOGETHER.



I
ACCEPTED.

LOOK--
MAYBE I MADE
A WRONG
CONNECTION
AN' IT SCREWED
UP YER HEAD--



FWAP!

SO WHAT
HAPPENS
WHEN
YOU, UH,
"FUSE"...?

Uhh...
I DON'T
KNOW!
HIT
ME!

YOU'LL
FIND
OUT...

FIND
OUT
WHAT?



THAT
THIS IS THE
COSMIC
SPECIES--
THE SEED...

"A HIGHLY
EFFICIENT
PACKAGE OF
INFORMATION..."
THE GREATNESS
OF LIFE...



THERE
YA GO,
SPOUTING
NONSENSE
AGAIN.

SO--WHERE'RE
YA GONNA
GO NOW?
BACK TO
SECTION
NINE?

GO?
BEATS ME,
BUD.

HEH-
HEH...



AHH...
THE NET
IS
VAST....



BIO



Masamune Shirow was born in Japan on November 23, 1961. Shirow studied drawing and oil painting at the Osaka University of Art. While there, he wrote and drew his first published comic, *Black Magic*, for *Janzine Atlas*.

After graduating, Shirow taught high-school art. During those years, he created *Applesseed*, the first volume of which was published in 1985 by Seishunsha. *Dominion* followed in 1986. That same year, *Applesseed* won the Galaxy Award — equivalent to the U.S. Hugo — for best science-fiction comic. Shirow continued to release volumes of *Applesseed* at regular intervals, until the publication of the fourth volume in 1989.

In 1988, Studio Proteus released the English-language translation of *Applesseed*, which immediately became one of the best-selling manga ever published in the U.S. English versions of *Dominion* and *Black Magic* met with similar success. Since then, Shirow's work has been published worldwide, in nine languages.

After assisting in the direction and character design of the *Black Magic M-66* animation video, Shirow went to work on *Ghost in the Shell*. The first episode appeared in 1990, in Kodansha's *Young Magazine Kazeokuban*. About this time, *Dominion* was made into an extremely successful animated video series now available in English.

By 1992, Studio Proteus had released all four volumes of *Applesseed*, which won the SPJA Anime Award for best translated manga. *Applesseed*, *Dominion*, *Black Magic*, and the *Applesseed Databook* are now published by Dark Horse Comics.

After writing and drawing several new episodes of *Applesseed*, Shirow decided to take a hiatus from producing the series he considers his "life's work." He had also been working, for Fujimi Publishing, on the *Neurohard* series, a "bible for a shared world" which, when complete, will serve as a blueprint other creators can follow to make animation, games, comics, etcetera, based on the world Shirow has created. In 1995, Shirow released *Dominion: Conflict 1* through his long-time publisher Seishunsha.

November 1995 will see publication of the first Japanese episode of the second *Ghost in the Shell* series and the worldwide release of the multimillion-dollar *Ghost in the Shell* animated-feature movie, directed by the award-winning Mamoru Oshii.

An extremely private individual — "Masamune Shirow" is a pseudonym — the man who is Shirow has never appeared in public or allowed himself to be photographed as Shirow. He lives in Hyogo, Japan, following the loss of his house in the 1995 Kobe earthquake, enjoys reading, and keeps numerous spiders as pets.

.... COVER GALLERY

















AUTHOR'S NOTES

- Pg. 17** Hacker: a computer criminal who infiltrates other cyberbrains, steals information, manipulates data and programs, plants viruses, and otherwise corrupts them. The penalty for genius hackers who can infiltrate ghosts (souls or psyches) is particularly harsh.
- Pg. 20** When you copy a page of something, the original doesn't disappear, and in the same way, information isn't really lost when it's "stolen" in this story. The only way you can really know it's stolen is by detecting when an improper contact is taking place — and it's hard to tell if it's really improper or not — or when there is some indication that others have the information (this requires an assumption). Since those who stole it will — obviously — pretend they didn't and will manipulate the data, information was become extraordinarily difficult. There can be multiple rulers existing simultaneously in the cyberbrain world, and their power is determined by the number of "keys" they have to access each network and by their ability to break through defensive barriers. The problem is the great number of code keys, or barrier-breaking ability, and the information processing power, not the size of the database. There's no use having a huge amount of information, if it's always being controlled; the network can still be cut off whenever desired. Ideally, one exerts the necessary controls at the necessary times, in a way that it won't be discovered. In order to be able to respond to changes in information, rather than concentrating it at one location, it's also better to decentralize and redistribute it. That also means if there's an accident or disaster, damage will be kept to a minimum. In other words, the nervous system of a cyberbrain person is his or her own individual network.
- Pg. 27** Regarding the antenna function of the brain, one thing people (or what might better be called "spirts") were originally capable of was a type of "channeling" that allowed them to synchronize with the external universe and make contact with the internal universe and with ki/energy, things easily understood as phenomena. For cyborgs whose bodies are almost completely machines, it's simple to put their sensory mechanisms in a sleep state, so when they run a "scientific" cyberbrain synch, they can easily enter a quasi-channeling state (Maybe I'm the only one who thinks this way, but when people talk about the mentally disturbed or schizophrenic person hearing "broadcasts" or "voices," it might be related to this phenomenon).
- Pg. 35** Most types of artificial blood being considered are white in color, androids in recent science fiction have white blood. In my story, however, in view of the antennae-effect and magnetism influence, I've given my endroid red blood with an iron component. The liquid that the neurochips are soaking in, by the way, is neither red blood nor white blood but a nearly transparent, artificial spinal fluid. Blood products apparently never flow directly into the human brain due to the "blood-brain barrier," and I've heard this is a special mechanism to ensure that foreign substances in the blood never directly attack the brain.
- Pg. 37** Regarding Bator's lines on page 36. Personally, I think all things in nature have "ghosts." This is a form of pantheism, and similar to ideas found in Shinto or among believers in the Mentou. Because of the complexity and function, and the physical constraints they have when they appear as a physical phenomenon, it may be impossible to scientifically prove this. There are, after all, humans who act more like robots than robots, and one cannot say for certain that they have no ghosts just because they don't act like it. In ancient times, neither air nor the universe were believed to exist. Just for reference, I should state that not all ghosts are the same in terms of complexity or effect.
- Pg. 46** Japan currently has no "Ministry of Internal Affairs." The police in Japan are headed by a state minister and a five-member National Public Safety Commission (including the prime minister). In *Ghost in the Shell*, police aren't the main theme, so to make things less confusing and because I like the way the British do things, I've created a Foreign Ministry and a Ministry of Internal Affairs. England has shadow cabinets, a term that has awfully negative underworld connotations in Japanese, so I don't like it, but I hope our opposition parties in Japan operate like that someday.
- Pg. 50** Government departments in Japan generally start drawing up their rough budget requests for the next year in April. (It's another way of saying "getting money.") The end of August is the Ministry of Finance's deadline. At the end of the year, the Ministry of Finance then presents a revised budget to the Cabinet and

shows it to each ministry and agency. This is, in other words, the ministry's request to "hold the line at point x." Upon accepting this, the head honchos, on up to vice ministers, at each ministry and agency start negotiating to try to restore whatever amount they can (with howls of protest and requests for a chance to explain further). Then the Minister of Finance presents the final deal to the Cabinet, and the Cabinet presents it to the diet, or (one hopes!) Parliament. In this story, however, the budget for Motoko's unit is part of a secret, "black" fund.

Pg. 56 For safety reasons, and to prevent information leaks, all of them, including Major Kusanagi, live in more than one place: downtown apartments, suburban condos, company housing, hotel rooms, etc. During their cyberbrain contact, they're turned off their connection to the outside network in order to thwart hackers from jamming the system. If someone has their cyberbrain key, however, they can still establish direct contact.

Pg. 57 The foreign minister's references to "E" ranking — "E for need and I for difficulty" — is something I made up. (It's such an insulting way of putting it, normally, I'm sure the minister would just say they're a tiny country not worth worrying about.) The protrusions above and below the helicopter nose are wire cutters. Just to clarify: wire cutters are not a fancy new secret weapon. They've been around for some time and are used as a guard against power lines and the cruel booby traps often employed in urban warfare: the wires that are strung to stop jeeps by decapitating the drivers, or the holes that snarl props, causing a crash. Also, this is a post-war scenario, and still fairly dangerous: so the VIPs have to be protected in a variety of ways. (Now, don't any of you readers go stringing wires to stop off-road bikes! It's dangerous, dammit! My brother-in-law was nearly killed by that.) I'm not sure what the minister means about Malles sending aid. It's a mystery.

Pg. 58 "ODA" refers to the Official Development Assistance, or Foreign Aid Ministry. (This is the problem agency, the one we wish would use our taxes more efficiently!) The foreign minister's comments about the ODA are probably a better way of looking at the situation, rather than just thinking of it as an "invasion using economic power instead of weapons." As long as the ODA fails to properly

understand the countries it's supposed to be aiding, it will probably just be spinning its wheels. (Of course, the recipient countries are also responsible for this lack of understanding.) "Gavel" may sound like a weird name for a nation, but that's because it's more than a nation. One of the sub-themes of this story is that Gavel has taken on the name of a giant conglomerate or capital group. (About the ODA, since Japan did make a mess out of Asia in the past, and this is still having an effect on the area, it's probably best to regard the aid as a type of compensation for past exploitation, if one simply chooses to ignore Japan's efforts, that is.)

Pg. 51 The "pinhead" referred to is, as one might assume, the ability to hit the head of a pin 100% of the time. For a short-barreled gun 100 yards is probably the limit. I think this shooter would almost have to be a genius, but I used this figure because I don't think it's completely impossible. Of course, it's important to remember that since she's a cyborg, one can almost completely ignore FTE (forearm recoil energy). Also, this score is obtained with a high muzzle-velocity gun that uses ultra-small caliber ammunition. One of the selling points of the Seburo is that it doesn't jam, even when a cyborg's pulling the trigger, firing 12 rounds in three seconds.

Pg. 52 Revolvers don't need to be loaded one cartridge at a time, some have speed loaders available that allow loading six at a time. Some can be fired quite fast in timing, but if your target runs to the left while you're loading, you may lose the opportunity to fire. Under normal conditions, you probably wouldn't be able to fire at all. I'm sure you understand why The Seburo, however, is a gun with an extremely reliable extractor and bullets with clean neck lines, so it rarely jams. It's an example of high-precision engineering in a small firearm. The AS11 seemed to be supposed to be a Chinese assault rifle based on a Korean model.

Pg. 53 "AI" stands for artificial intelligence. This is a field of research in computer science that studies not just business-related information processing, but intelligent functions. I think of it as a knowledge/information processing device that is not human. That is, artificial. Experts hold a variety of opinions on this.

Pg. 57 Contagious medical waste, or biohazardous garbage, is often poorly handled and will

become a major problem in the future. Not only are the associated costs astronomical, but terrorists may start using some of the disease-carrying material. Finding a solution — create a huge, high-temperature incinerator and collection specialists, the parks and recreation can come later — should be given top priority by local governments. And hospitals are they really sealing this stuff properly and giving it to the night parties? From what I hear, the volume isn't that great. In the illustration, our sensor citizen isn't being pecked by crows, probably because he's pickled in some sort of hazardous substance.

Pg. 73 After this kind of conversation with Togusa, Major Kusanagi probably thinks it was a mistake to have head-hunted him from police headquarters. She believes the ability to sniff out criminal activity by intuition cannot be acquired through training or experience. She calls this "ghost-whispering" and likens it to the abilities possessed by schizophrenics or channelers.

Pg. 84 In reality, night usually makes night, but there are those who, in reaction to this bleak reality, believe in the opposite ideal that night shouldn't make night. In trying to enforce their ideal, however, night, or force often becomes necessary, thus showing how difficult it is to put ideals into practice. Also, in talking about what is right or just, whether with regard to groups or individuals, Muslim society or Christian society, etc., the different concepts of what is right lead each to view the other as evil. This makes the whole concept of right or wrong seem rather antiquated. If a consensus of the majority is all it takes to determine what is right, then having and controlling information becomes extraordinarily important.

Pg. 86 A robot is a system — this includes computers — wherein a specific input, or instruction, results in a specific output, or performance. Some robots, by themselves "can discriminate and perform multiple tasks to a certain extent." But robots are fundamentally different from androids. "Android" is a word that refers to the mecha that results when humans try to see if they can create humans using mechatronics. Conversely, it's a type of mecha that allows humans to mouth statements like, "humans are complex, but they are a system, so they can be replicated if only these components are put together in such and such a way."

Pg. 89 Als with prosthetic bodies probably never experience hunger sexual desire, the desire to sleep, or even the desire for glory and honor unless programmed to do so. If they have any desire, it's probably to expand their network or create something or control something. In other words, to grow as an information system. This is something we may know in the near future, but have no way of determining now. I don't think there's an AI superior to a human in existence yet, but how should I know? I'm only a cartoonist! The definition of a human is very vague, so when an AI superior to a human is developed, the question is: will humans really be able to recognize it?

Pg. 100 In looking at a book on brain death, it appears that whether a ghost attaches itself to a body or not is determined partly by the activities of the cerebrum and the lower part of the thalamus. Generally speaking, what we refer to as the "spirit" or "soul" is a very vague concept, including things programmed into, or closely related to, the physical body, such as memory, the results of chemical reactions, and emotions, etc.

Pg. 102 I'm sure there's really no need to note this, but the amount of micromachines in the solution, the amount of current applied, and the length of time, etc., are all — allowing for some error — determined by the class of micromachines. There are different types of micromachines — those that react to pressure, changes in temperature, pain — which is difficult — and they are mixed into the solution at a fixed rate. Changing the ratio of micromachines makes it possible to make a particular sense more delicate. Furthermore, for cyborgs employed in special types of labor it's also possible to create special skin senses — such as the ability to detect gases or magnetism — that humans do not possess.

Pg. 103 These micromachines are a bio-type created using enzymes such as luciferase (what a fiendish-sounding name!), which is found among other things in the light-emitting organs of fireflies. (In reality, they're not black spots, of course.) Someone was supposed to have genetically engineered a Japanese killifish to produce luciferase. I wonder what happened to that idea?

Major Kusanagi is deliberately designed to look like a mass-production model so she won't be too conspicuous. In reality, her electrical and

mechanical system is made of ultra-sophisticated materials unobtainable on the civilian market. If she appeared too expensive, she might be suddenly waylaid on a dark street some night, hacked up, and hauled off to be sold. "Custom models" here implies models with a prosthetic design created by a professional artist. For such cyborgs, an artist designs everything from the shape of the mechanical components to the external appearance. It is not unusual for designer-cyborgs to be over-stressed, or to have a variety of design imbalances, sometimes with grotesque results.

Pg. 105 16" indicates that the micromachines used for skin sensation are extremely tiny. Since obtaining these is an act of treason, and thus is not available on the open market, this is something that Major Kusanagi has secretly obtained. It's clear that these women are manufacturing products of extremely high precision, but it's impossible to determine if the precision is the result of the 16". We can assume, however, that they are using micromachines even more advanced than those on the open market. The women, therefore, don't have to worry that someone will find out what they're doing.

Pg. 106 What do total cyborgs eat? I imagine that initially, cyborgs consumed small quantities of a paste-like substance or pills, but — partly for psychological reasons — by the time of this story, they are shown eating synthetic food such as shown above, with a "normal" appearance and oral sensation,* including taste. Puchikomas, on the other hand, can last for two months by merely replenishing their tanks with a fluid mixed specially for neurochips. (Or let's assume so.) Puchikomas aren't pure bio-robots, however.

Pg. 108 This is not an E-beam space or virtual reality, but a 3-D video room. Colonel Tanabe is on a platform like a huge room-runner, the orientation of which is adjustable. He's surrounded by a dome-shaped room, with scenery simulated using a retinal projection on the white, screen-like walls. Others would not see the view he does. Gelf simulations using a similar, but much cruder principle exist today.

Pg. 115 "One life is more precious than all the stars in the heavens," or so the saying goes, but it's just a noble sentiment. In reality a planet is worth far more than even a race of beings, including

human, and thinking otherwise is a manifestation of the arrogant attitude we humans have that makes us ignore other life-forms. I hate the saying. I do have respect for human life, but I'm just trying to say that it's not as important as a whole star.

Pg. 118 The activity of cells creates order, forming organisms, human bodies, and groups of individuals. Just as at each level, every one of these things has its own phase — if that's the right word — the phrase about the "world turning" refers to the overall speed of people's activities. This doesn't necessarily imply there is a larger, overriding conscious "world." Although they are of completely different scale, I use the words "god" and "spirit" in a similar way. Channelers are said to "speak with the will of the gods," but I don't think this means a human-like god speaks to the channeler. I think a special phase that we call "god" merely syncs with the channeler's linguistic field, physical functions, etc.

Pg. 119 In the future, perhaps such advanced, high-precision robots (almost all androids) would not really be discarded so easily. But only a few years ago, who would have believed that the office and audio/video equipment we now take for granted would become so common? Frankly, I doubt that true humanoid robots will become so popular. If they were mass marketed, it would probably be with a leasing system, and there would be monthly inspections. Don't forget though, that nowadays when machinery's been used for five or six years, it's scrapped or sold cheaply to other countries. The same thing's true for consumer goods with AI functions built into them.

Pg. 121 *Trochophyton* and *Claviceps* are names of fungi. For those who want to know more, refer to W. D. Gray's *The Relationship of Fungi to Human Affairs*. There's no deep significance in using these names, but they were convenient for telling a story with lots of creepy elements. In order to keep up in the next century, Japan has got to develop micromachines and VLSI technology, and, to do that, sterilization and anti-fungi technologies will also be essential. Fungi applications and cyborgization, or using genetic engineering, will become an important theme.

Pg. 125 For readers who demand realism, I should note that a cyborg such as the Hsianbi president — a master-slave, dualistic heart-mind type —

probably do not function properly or be able to exist unless it had simulated internal organ signals in a fairly realistic way. We humans are normally taught to distinguish between the body and the mind, but we shouldn't forget that the brain is part of a neural net that runs through the entire body, and thus, is part of the overall system. I read a report from somewhere about an experiment that indicated, "it is possible to mechanize part of the system (the human body), but when most of the end-terminals in the system are removed, output from the autonomic nervous system practically vanishes." In this story, I'm assuming that signals in artificial, prosthetic systems have been developed to a very high level.

Pg. 128 This is a trivial point, but rifle bullets, as we all know, are very fast, usually faster than sound, depending on distance, performance, and muzzle velocity, of course. As a result I've deliberately avoided showing bullets strike after indicating the sound. Given the way I've drawn the rifle in this section, it wouldn't really matter, I suppose, but I did it anyway, which is a bad habit of mine. In this scene, Togusa was supposed to fire back two or three rounds and dash — with Batou covering him — which would have let the pair reach the bottom of the building faster.

Pg. 132 The man's words in panel 7 have no particular meaning. He's just trying to get Batou's attention, and while some people might understand him, the main thing he's trying to convey is hostility. Since it works, it may be a type of incantation. He's assumed that Batou and Togusa are police from the way Togusa yelled "Freeze!" at him.

Pg. 137 In movie scenes of special forces making indoor assaults, one often sees several people with guns drawn charging down a hallway. They'd have to be really "special" forces to do so (heh). In reality they usually peek around a corner first and then, depending on the situation, make their move (like they did in *CIT* and *Silence of the Lambs*). In the old days, they probably used a dental mirror or something. The most important thing is to make sure you have the advantage before the enemy spots you and to not just start blasting away. The real firing should be done as support or when moving.

Pg. 138 Normally, I hate the sort of expository lines used in the second panel and try to avoid using

them, but for *Ghost in the Shell*, I've forced myself to make an exception. The name "Gosseyn" is taken from A. E. van Vogt's science-fiction novel, *The World of Null-A*. Adam and Link are similarly inspired by Eando Binder's *Adam Link — Robot*. If the "ghost" is a "phase" or "phenomenon," I suppose during dubbing the original could disappear and something different would be born in its place. Regarding the smuggling, there may be those who would say this wouldn't be necessary; the Hanks would be able to breed the lode themselves, but let's assume that the lode, etc., is too expensive and they've therefore decided to use stolen goods.

Pg. 141 The boss is mistaken when he talks about the death penalty here. At the time of the story it doesn't exist anymore. Personally, I think the death penalty should only be considered on a case-by-case basis, and that it's not right to lump all those who commit crimes under the broad term of "criminals." I'm not a devotee of Hammurabi, but I do worry about giving too many advantages to the perpetrators of crimes. Perhaps people should be sentenced to "death" by execution, with punishment delayed if activities benefiting society are earnestly pursued.

Pg. 142 Regarding fleeing the country, I remember seeing the following on the news once: a serial killer sentenced to death in the United States fled to and was captured in Canada, which has no death penalty. In Canada, the argument erupted as to whether it was constitutional to return the man to the U.S., knowing that he would probably be executed. Learning of this, several highly sadistic serial killers — some of whose victims' bodies had not been found — remarked that "truly civilized nations don't have the death penalty." I don't know the upshot of that particular case, but clearly, civilized nations with great respect for human rights are beloved by criminals so vile they wouldn't even appear in a comic book. Whatever happened to "crime and punishment"?

Pg. 143 Regarding ordinance and equipment in this scenario it's being jointly managed and developed by multiple corporations. Individuals and units are simply not capable of handling the guns, prosthetic bodies, manufacturing parts requiring special materials, doing replacements and maintenance, and maintaining the equipment in the ultra-clean plants that are required.

Pg. 150 The gun has a catch, about two centimeters above the ejection port, that throws the cartridges forward, but for right-side ejection, it ought to be possible to design a little catch, nowhere near as big as a kicker, that would scatter them downward. (What? You don't think that's a good idea?)

Pg. 151 We won't go into detail here about the fact that a two-hour retroactive check was done later on Puchikoma's external input record. No evidence of hacker break-in was found, but this in and of itself does not guarantee that none occurred; it merely means that operations continue, with an added element of uncertainty. I'm also not sure if an AI would really understand the concept of "profound" or not. It's used here to indicate that the information is given high priority when categorized.

Pg. 154 Methuselah is a name from the Bible and has the connotation of someone who's lived a very long time. It's not the Soviet woman's name. "Comrade" already sounds old-fashioned, but I decided to leave it in anyway.

Pg. 155 As far as the Northern Islands are concerned, it would be great if both the Japanese people who used to live there and the Soviets who live there now could somehow coexist. But when it comes down to an either/or situation, each side always claims historical precedent and nothing's ever resolved. Japan can assert its claim to the islands all it wants, but the assertion won't do any good as long as it's just a gesture. If only we could use all the energy expended on arguing on finding a new solution! Do we really need to defend our rights to the point of ignoring the entire Soviet Union? I know Gorb's in an unstable position and can't really develop a long-term strategy to solve the situation... but heck, the Soviets are taking too many fish in the area. (Editor's note: this commentary was written in 1989.)

Pg. 158 For the moment, forget that with anti-HERO measures implemented — "HERO" or Hazards of Electromagnetic Radiation to Ordnance, refers to the damage that EMF can cause to electro-mechanical components — both the helicopter and Puchikoma would have been switched to manual mode; the attack banner mode would have been activated to prevent cyberbrain hacking, and the main switches would also have been cut. Also the Betrave cytopace is comprised of skyscrapers two kilometers high,

creating a disorienting sense of scale. For instance, 1,221 meters of Mt. Betrave are completely blocked from view by the buildings. In the drawing on this page the mountain is rendered at around 4,500 meters above sea level with the metropolis sprawling 11-12 kilometers out on either side. Or something like that.

Pg. 194 Yano's family was notified only that he had "died in training" or was merely "deceased." Families are never told the details or the truth or when, where, or how members die. At least this is better than learning about it years later, with the body somewhere unknown all that time. There are also times when deaths are reported prematurely, before a confirmation has been made, and the person is actually still alive. And, of course, there are times when death notices are sent out merely for strategic reasons.

Pg. 195 In distributed systems engineering, there's apparently no concept of "redundancy" in a group. To remove the old micromachines — let's say one has to inject "C" parts — reverse the adsorption, make them rotate, apply a centrifugal force of 5×10^4 dyne/cell to strip them off, and then suck them out with a magnet. (Even the blood-brain barrier, it's probably not a good idea to try to run them into the bloodstream and expel them that way.)

Pg. 202 Of course, in reality our pair would have been burned to a crisp and left without hair, clothes, or skin, but I don't show this because it would make things too confusing later on. To compensate, though, I've put an aquarium at the edge of the dock, right next to the Mayor's boyfriend, and I've added a bathroom that's hidden by her. (I know it's normally supposed to be next to the door when you enter and that that still doesn't make up for it, but hey? Sue me!)

Pg. 204 Armored suit. A type of bullet-resistant, fire-resistant suit, completely covering the body and consisting of an external shell of compound materials and four battery-powered limbs for locomotion that mimic human movements using master-slave technology. Although referred to by different names, some dangerous and impractical toys of a similar nature have been developed of late.

Pg. 209 This is a pretty classic way to avoid being tailed, but it probably wouldn't work for true pros. Normally, a 24-hour tail requires

considerable manpower to prepare for all eventualities, it takes careful planning. If trains or buses are being used, shifts of people going in and out of the next three or four stations are needed. If cars are being used, it requires people covering either side of the road on which the suspect is driving. In reality, of course, these operations rarely go by the book because it's impossible to prepare adequately, to get all the people required or the budget to support them. In theory, I suppose, true pros are supposed to get as close as possible to textbook situations. Using split-second judgment to station two or three henchmen is one way to get around some of these problems.

Pg. 220 'HV' refers to actual ultra-high performance, high-velocity armor-piercing shells. In this story, after FN manufactured advanced P90 weaponry, these shells were developed for handguns and submachine guns. HV bullets are small caliber, providing low speed and high penetration power, but they don't have very good stopping power against humans because they go right through them. Since these bullets are very effective against bulletproof vests, light armor, cyborgs, etc., in *Ghost in the Shell* they're fairly common but generally not available to civilians. The *Saburo* " firearms unit bears carry use HV shells. Armored weaponry, like the think-tank that appears here is necessary to go up against HV shells.

Pg. 223 Only a total cyborg can undertake this sort of high jump. If a partial cyborg with mechanical legs or limbs tried it, this would probably cause a rupture where flesh and machine parts are joined. Although a different level of analogy, it's sort of like the situation with artificial human bones of the $MgO-CaO-SiO_2-P_2O_5$ glass variety, currently very popular. This material is reportedly between four to seventeen times more elastic than human bone, but because concentrated stress creates a problem, physicians apparently use something closer to actual human bones for better overall balance. In real life, of course, cyborgs are apparently being developed not with "superpowers," but artificial tissues that attempt a substitution for bioactive materials.

Pg. 234 Regarding Major Kusanagi's unnamed boyfriend, what looks like a bandage or a towel is actually a collagen seal designed to stop the bleeding. We'll pretend here that it's the same as an actual product currently being sold by

Arvate Inc. in the United States. There is a book (available only in Japanese), published by Shogakukan on blood coagulants, titled *Jintokoo Shyan, or Victory for the Human Body*, that lists for about \$60.00 (ask!) but has lots of photographs and is interesting reading.

Pg. 235 When traffic accidents are used to assassinate people, the assassinations are extremely hard to detect. Of course, sophisticated techniques are required to make sure the assassin is unseen while the target is killed, but I won't list them here as it might be dangerous — I don't want anyone to try them out! The fact that assassinations are used in *Ghost in the Shell* means there has been a failure in the political process. It's like rape, I suppose. If you see one happening before your eyes, you're not going to be able to talk the rapist out of it. You'll probably have to use force to stop the perpetrator. Ideally, that should happen before, not after, the rape takes place. Sad, but true.

Pg. 239 In the hour and a half before the incident was reported, assume that a thorough attempt was made to detect operator input errors, but that it wasn't possible to turn the power off because of delivery schedules and the need to protect the robot body.

Pg. 242 The "soul" that Batou is referring to here represents a fairly simple collection of energy, a relatively low-level spiritual structure — what I would have referred to as a "low harmonic level" in *Ones* — as opposed to a true "ghost," which is the higher level spirit attached to human bodies. "Mancou" and other "spirits" exist on an even more elevated plane and resemble what we call "gods" in the generic sense. The spirit world is infinite in its range, but from our perspective it includes everything from just below humans — from residual memories to simple insect and animal spirits — to way above humans (macrocosmic spirits at the limits of human imagination). Like human user space, the spirit world is not vertically ordered in a hierarchy of control. Instead, the upper level is the sum of the activities of multiple sections. The same principle also applies, I suspect, to politics and ecosystems. Of course, if you select specific, individual levels to examine independently, then the entire structure appears to have a master-slave/top-down control aspect to it, but one suspects that the act of selection itself is what yields the materialistic conclusions to which people often come. If concentrated

thought creates matter, molecules, chemical compounds, cells, organisms, and systems, then there is also a mode at each level of the hierarchy capable of bundling it all together

Pg. 245 In this story people of Wille's generation are often not directly linked with cyberbrains because they don't want their own brains fiddled with by cyberbrain doctors young enough to be their children. But since this also limits their dealings with the world, they try to bridge the gap through cyborgization. Wille is a good example

Pg. 252 It gets harder to tell in the rain, because of decreased visibility, but optical camouflage becomes easier to detect (especially when moving at high speeds). Opto-cam taping is a trademark of S-9. Batou is following two cars behind the target car

Pg. 266 Cyberbrain space and cyberspace are often depicted as glowing, three-dimensional graphs. This is an easy-to-understand representation, but I think cyberbrain space consists of something far more conceptual, something beyond and unrelated to our visual and audio senses. Of course, it's all right to use audio-visual representations, but the conversation seems inefficient and ultimately meaningless. After all, there is no form or sound in the cyberbrain world. And besides, we're talking about something that doesn't even exist yet — virtual reality still relies on the five human senses for its replication and thus isn't a true cyberspace — so this is all really meaningless speculation. Still, it's fun to imagine what it would be like

Pg. 267 For those wanting to know more about *saccades*, etc., rather than a book specifically on biology, I recommend an interesting work titled *Sensors and the Eyes of Living Things*, edited by Kazuo Shimizu and published by the Information Survey Association, 1985. This book — which I've recommended before — describes not how we see things with our eyes, but how we "see" light information that comes through our eyes with our brains. (Note: this book is presently only available in Japanese)

Pg. 269 I drew the final panel the way I did just to make it easier to understand. The core memory is by no means the core of the puppeteer, he is the total system itself. Generally speaking, when

we refer to specific "individuals," we're not referring to their brains, but to their entire body. A "ghost" in this case refers to the state of the entire body-system (it might even be called a "phase") and not to a bundle of energy in the object called a "beam," although it may be a place created by energy. In our story, the "self" that the puppeteer refers to is an integration of information that has reached a specific level of complexity, shifted, and created a phase called "life."

Pg. 271 According to some psychics, depending on the situation, even the spirit that we think of as the "self" (a "phase" of the system, perhaps?), may actually change mode, from thought or physical self, to a level where it is being influenced or controlled by a guardian deity, a protectorate spirit, or an original spirit, etc. If we're talking about infinite free willers in both lower and upper levels, then inner space and outer space continue ad infinitum. Shinto also considers things in terms of three stages — the *shumenshi* or conscious self, the *taramushiro* or unconscious self, and the *tamazumemushiro* or the self that transcends self.

Pg. 272 Just as one cannot see the layout of the entire vascular system with a micro-endoscope floating in the middle of a capillary, Major Kusanagi is unable to see the exact image drawn in these panels. She would only be able to see it if she had a map of the entire system sent to her from an observational "satellite," or external source. It's sort of like the game where you put your hand in a box with a maze and with your eyes closed try to imagine what it looks like, or the way that in a dream you don't know the exact location of all the roads or buildings in a scene; at least most people don't. In a cyberbrain network, distance and specific locations can almost be ignored, especially when the hardware is wired. The more I try to visualize it, the more this type of depiction loses meaning, I suppose.

Pg. 273 Some readers may think that in *Armedak* should first use Batou and then call for outside help instead of the other way around. For the sake of clarity, let me explain. I thought that if Major Kusanagi were in trouble, and Batou did a brain draw using the same method and technology and barnet, especially since he'd be using his own barnet this time, he'd only run into the same problem. In this story, the winners and losers are not determined by guts and passion but on a digital level by the

"system" and the voltage. There's no real struggle or contest, a split-second flow determines the winner.

Pg. 275 In this case, the electrons and the magnetic force that Major Kusanagi is referring to have the same relationship as patterns and backgrounds do. I realize that Kusanagi's bit about "electron traces" is a little unclear, but it's just her way of saying it.

Pg. 277 The Puppeteer has discovered that at each tier, the relationship between quanta creates a phase. This is also a discovery of self. "The self as part of the whole" used to consist of a relationship such as "the complex structure of natural things ↔ a part of nature," but now phases such as society, corporations, and the state are also powerful. Most religions have anthropomorphized the upper level of the system they believe in, and thus think of it as a sort of lord over the decision-making process, but like the relationship between the mind and the body, this is not really a higher-level control. It should be thought of as a phase (model) of the totality.

Pg. 281 What do you think are the top three events in history? In the context of the story, Major Kusanagi is thinking of the discovery of fire, electronics, or electricity and the creation of life. I realize these are kind of vague! I know that some people would probably list the wheel, computers, nuclear energy, or writing, language, or death, which is a big one. All are important. In my way of thinking, fire differentiated man from apes, and electronics includes information processing by computers. I can understand why some people would leave out physical tools, but not including language and writing systems (and symbols), and especially death? Well.

Pg. 282 The fact that I have a lot of religious references in my comics recently — Onon is another example — has nothing to do with the popularity of new religions in Japan. I include the reference because I think that as society ages and enters an era where high-tech and philosophical problems are increasingly intertwined — issues regarding brain death and the environment — organized religion is one of our biggest obstacles. At the start of the twenty-first century, around the time a savior is prophesied to return, I believe the fusion of science and religion is going to be one of the most critical issues facing us. Religion will

have a huge role in issues of abortion, blood transfusions, bio-meat for consumption, and the use of fetuses and the dead for bio parts.

Pg. 284 Kusanagi's skull is made with a titanium shell, and she has a large number of prosthetic enhancements, so she really does have to worry about sinking. But not all cyborgs sink — some models are designed to float with special foam-based materials.

Pg. 286 Y-3 does not refer to a submantra but to a cyborg in the shape of one, covered with muscle tissue on both sides, extending back to a tail.

Pg. 291 Certex is a coined term. It's a Czech-manufactured plastic explosive (PE) second in popularity only to Semtex. A real headache for security, it can't be detected by sensors at airports, yet only 10 ounces of it can blow a 747 to smithereens. Certex does not exist in the real world.

Pg. 295 Use of strategic, nuclear weapons is referred to as "H (high) I.C.," traditional warfare is referred to as "M (middle) I.C.," and conflicts involving low levels of destruction are referred to as being "L I.C."

There are examples of this type of exchange in the British Parliament, but in Japan, with its shadowy back-room politics, it seems highly improbable.

Pg. 298 If you're confused, this is Kusanagi's Section One boyfriend from chapter eight.

Pg. 301 MOSSAD is the world-famous Israeli intelligence agency which — in the era of this story — has gone a little soft.

Pg. 312 Japan used to have a jury system, but it was suspended, not abolished, in 1943. November 1, 1990 is the one-hundredth anniversary of Japan's modern judicial system. In recent years, there has been a movement to reconsider the use of jury trials and other forms of citizen participation in the legal system.

Pg. 327 Kusanagi and Baeu's car is obviously not from Public Security's vehicle department. Nor is it one of many they've hidden throughout the city. They're simply driving a stolen car. They've removed the plates and replaced them with their own, and these plates are forged versions of VIP numbers that they've

researched. It's one of young Batou's clever little ideas. He figures that if any problems occur, it'll at least make the authorities hesitate before responding.

Pg. 330 Major Kusanagi is worried about the vehicles in panel three because she can't imagine multiple thieves breaking into such a large facility and carrying off everything they steal on foot. In addition to the three dead thieves, she thinks someone else must have fled in a vehicle. Of course, there's always the possibility that there were only three thieves who came on foot and really did plan to carry out the loot, but since they're dead, she doesn't have to worry about that situation.

Pg. 331 Panels four and five show a screw-activated switch, the type used in bomb casings. But in this era, the system is electronically activated with only a half-turn because shape-memory alloy wire is used. As a result, the easiest way to dispose of bombs is to cover them with a titanium shell and blow them up.

Pg. 332 It's not clear in this story whether the actual metal body was corroded when the mold attacked the aluminum alloy casing, but when Batou sees the mold-covered mechanism he says, "Mold? On an aluminum compound?" Given the setting, it may be the result of a micro-machine — in this case a microcrobial robot — weapon, but I for one certainly hope that such a weapon is never manufactured. (How irresponsible of me to believe this without basis.)

Pg. 334 In panel five, Batou is not trying to hide in a locker. He's entered a secret passageway through an opening disguised as a locker. In reality, there's a huge duct right under the locker, so they've really just carved a hole in the duct and closed and locked off the other entrances.

Pg. 336 Concerning the fascinating pyramid indicated with protons (yangarons) this is a diagram of a system, so it ignores the actual numbers at each different level. As with powers of ten, in terms of size, the progression would be [microscopic constructions → human size → heavenly body size], but in terms of structural complexity it would instead be [macroscopic constructions → heavenly body size → human size], which is also the order in which they were actually created. In this sense, in the third panel on the next page the more one

enters the middle region, the newer and more complex the system becomes. Please view it as being in the realm of "human size" in other words: from the level of complexity, it's inevitable that the micro and macro worlds resemble each other.

Pg. 337 I've read somewhere that in the very distant future, after 10^{100} seconds have elapsed, the material universe will become an extremely rarefied — and when I say "rarefied" here I mean really rarefied! — gas of electrons, positrons and photons and will stabilize. With this kind of universe, it's hard not to start imagining such implausible things as the eternalness of God or spiritual trips unhindered by the speed of light.

Pg. 340 I'm sure everyone is aware of the theory of the void-like nature of the galaxy, but the idea of a rotating universe is probably a product of my own vivid imagination. My reference to "moment" may be a completely inappropriate and silly analogy, but who knows what time is really like anyway? In the second panel, in terms of a signal I think that complete homogeneity would represent death. True randomness is something machines are actually better at than humans, so a "biased-randomness" in and of itself may be a characteristic of life.

Pg. 341 For an interesting definition of life, I recommend von Neumann's ideas as described in "An Information Theory Definition of Life" in chapter 11 of the book by William Poundstone titled *The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge*, Contemporary Books, Inc. It has descriptions of everything from dead bodies to clones, but — what the heck — I wouldn't know how to classify an old man with dementia who's finished his genetic replication. Unless somebody can define holons, it seems to me that organ transplants will make this problem spiritually impossible to resolve. But if self-replication can be considered a life-form, then intelligence should be, too. The real problem is that "life" is a such an unscientific word.

Pg. 343 The "altered-species/glider" that the Puppeteer is referring to probably includes the slack and "play" that he would gain as a result of incorporating Kusanagi. "Glider" has no specific meaning here. I know it's not ideal for this situation.